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THE BOSTON
Medical and Surgical
JOURNAL

Owned and Published by THE MASSACHUSETTS MEDICAL SOCIETY

OFFICIAL ORGAN OF THE NEW ENGLAND SURGICAL SOCIETY, AND OF THE BOSTON SURGICAL SOCIETY, INC.

Per Annum, 25c per Copy
Volume 190, Number 6

THURSDAY, FEBRUARY 7, 1924

Published Weekly in Boston at 126 Massachusetts Avenue

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Mucous Thyroiditis with High-Grade Dental Infection. Hemiplegia with Recovery

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Hodgkin's Disease

Clinic of **Dr. Russell L. Haden,** *Bell Memorial*
Use of Volume Index in Study of Blood in Anemia
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High Fat Feeding in Diabetes

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Intestinal Invalids: Constipation. Mucous Colitis. Fermentative Colitis
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Clinic of **Dr. Harry C. Berger,** *Children's Mercy Hospital*
Purpura Hæmorrhagica. Whole Blood Injection
Buchsprung's Disease

Clinic of **Dr. Frank C. Neff,** *Christian Church Hospital*
Care of Premature Twins and Triplets

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Tetanus, with Recovery

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Congenital Dextrocardia. Child with Congenital Syphilis and Diabetes Insipidus

Clinic of **Dr. Richard L. Sutton,** *Bell Memorial*
Treatment of Syphilis

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Neglected Factors in Treatment of Syphilis

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Cardiovascular Syphilis. Individual Response to Specific Medication in Syphilis

Clinic of **Drs. W. W. Duke and D. D. Stofer,** *Christian Church Hospital*
Allergy due to fish glue

Clinic of **Dr. Robert C. Davis,** *University of Kansas*
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Botulism: Antitoxin and Recovery

Clinic of **Dr. Fred J. McEwen,** *St. Margaret's*

Clinic of **Dr. Edward T. Gibson,** *Children's Mercy Hospital*
Chronic Idiopathic Tetany. Paralysis Agitans Syndrome in Neurosyphilis

Clinic of **Dr. A. L. Skoog,** *University of Kansas*
Epilepsy. Multiple Neuritis

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POLLEN ASTHMA

Seasonal asthma is usually caused by pollen sensitivity. Even in perennial asthma, pollens are frequently found to be primary or secondary causative factors. Hence, it is now recognized that in the diagnosis of asthma pollen proteins should be used in association with food, epidermal, bacterial and other proteins. Diagnostic pollens are, however, of particular importance when testing cases whose symptoms are accentuated during the pollinating seasons.

List of pollens showing regional distribution and time of pollination sent on request.

The Arlington Chemical Company

Yonkers, New York

THE BOSTON
Medical and Surgical
JOURNAL

VOLUME 190 FEBRUARY 7, 1924 NUMBER 6

Original Articles

THE SCIENTIFIC TREATMENT OF TUBERCULOSIS*

BY HORACE LO GRASSO, M.D., PERRYSBURG, N. Y.

THE treatment of extra-pulmonary tuberculosis has only recently begun to emerge from the mists of empiricism into the clear light of scientific knowledge. With this passing, dissatisfaction has arisen with the commonly used term, "surgical tuberculosis," inasmuch as it suggests a form of therapy that is quite incompatible with the conclusions arrived at after a careful consideration of the etiology of the disease. The use of indiscriminate surgical procedure shows a failure on the part of the surgeon to recognize the fact, now almost universally acknowledged, that a tuberculous involvement of any organ or structure of the body is only a local manifestation of a constitutional disease, the primary lesion of which is usually found in the lungs or lymph nodes.

It must be borne in mind that tuberculosis, whether it manifests itself in the lung, bone or any other part, is always tuberculosis. The etiological factors are practically identical in every case. Invariably the disease develops as a result of the presence of living tubercle bacilli in the body at a time when the resistance has been lowered through previous debilitating diseases, unhygienic environment, mental and physical strain, irregular living or excesses. Why, then, should the treatment of any one form be so radically different from that of another? Rest of body and mind, fresh air and sunshine and the best hygienic conditions have been, and are, the mainstay in the treatment of pulmonary tuberculosis. Is there, then, any logical reason why we should not employ in the extra-pulmonary type the same therapeutic methods as have been used in pulmonary disease?

One wonders why the truth about this matter was so slow in being recognized. But one need not seek far to find one of the reasons. Swift and radical measures are always more attractive both to patient and physician than slow and conservative ones. The specious hope of a short cut to healing led the surgeon on to oft-repeated attempts. His skill had availed in many conditions locally resembling tuberculous lesions, so why not in them? But surgery, instead of being a beacon light, leading on to health and safety, proved to be a will-o'-the-wisp, luring into the quagmires of despair. Even after operations that have been mechanically successful, the results to the patient have been pain, mutilation, and possibly death. Suffering already from the weakness inherent to his disease, he is subjected to the shock and debilitating effects of an operation. He is depressed in spirits by long months of confinement within the walls of a city hospital. Frequently there is a flare-up of pulmonary lesions subsequent to anesthesia. The way is often opened for secondary infection; and the body that has made a gallant, uphill fight against a single infective agent, is hard pressed to repel the onslaught of additional invaders. Moreover, where surgery holds sway, the function of the part is always sacrificed.

In comparison with this picture, consider the condition of the patient who has been removed from the smoke and dust of the city to a hospital or sanitarium in the country, where he can enjoy rest and the pure fresh air, and where the body can be bathed in the life-giving rays of the sun. The pleasant environment that usually surrounds sun-cure clinics is most conducive to happiness and produces the favorable psychic effect which is of such vital importance where the period of treatment is a long one. Coexisting thoracic lesions, instead of becoming aggravated, improve rapidly. The patient soon becomes contented and hopeful, and each recurring sunrise brings renewed cheerfulness and optimism.

Although heliotherapy has proved successful with patients of all ages, it is especially satisfactory with children. Placed in the environment that was intended for them by nature, they not only recover from their disease, but enjoy a healthy and vigorous development. This is true not only of tuberculous children, but also of those suffering from rickets and other diseases caused by malnutrition and unhygienic living conditions. Indeed, one of the newest and most important developments of heliotherapy is its application in the treatment of rachitic children.

In our institution at Perrysburg, the Rollier method of heliotherapy has been employed with such variations as have been considered advisable owing to peculiar local conditions. It is extremely difficult to outline and practically impossible to apply in heliotherapy a technique which is hard and fast. It must of necessity be

*Presented at the New England Tuberculosis Conference, Worcester and Rutland, Mass., September 12 and 13, 1923.

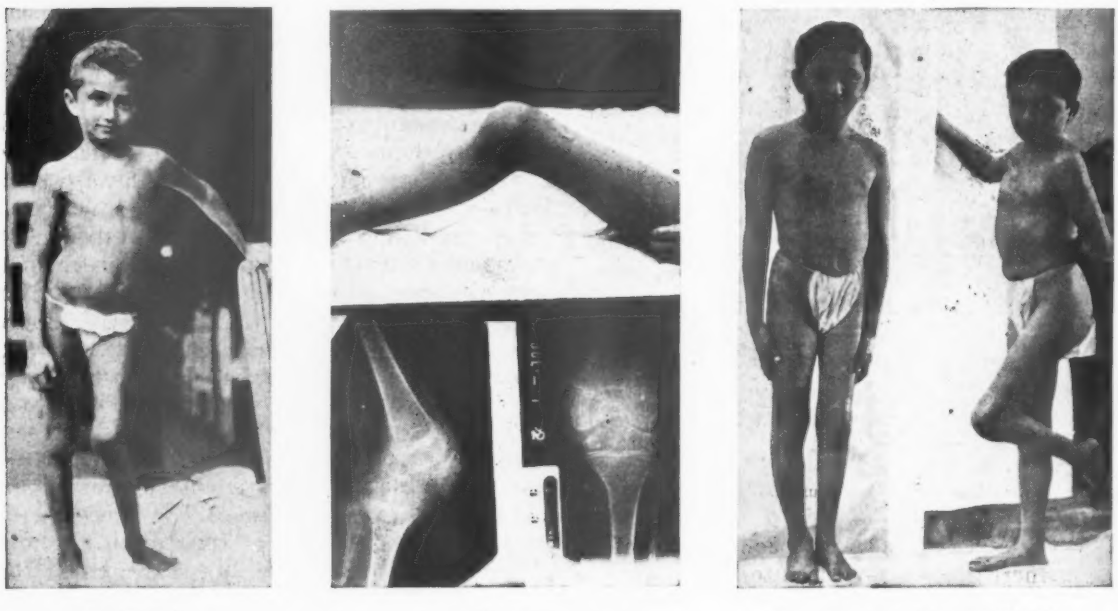
a flexible régime, controlled and supervised by careful observations and the enforcement of such measures as will best meet any untoward effects or unfavorable conditions. In this respect we might mention some of the most important and variable factors, such as the general physical condition of the patient, location of the lesion, and reaction or intolerance to sunlight. Changes must at times be made to meet varying factors. For instance, the patient's physical state may not permit the administration of a full exposure period but may require a shorter period. Again the season of the year plays an important part and the changes in the intensity of solar radiation must be recognized. The early and late hours of the day, which are so desirable during the summer months because they are less likely to produce depressive effects, cannot be used to advantage during the spring and fall, owing to lessened solar intensity and temperature changes. The middle of the day, with its intense light and high temperature, is contraindicated in the summer, but in the spring and fall this time of the day is to be desired, as these hours more closely resemble the comfortable early and late hours of the summer.

Upon admission the patient is gradually accustomed to the out-of-door life before exposure to the sun is started. The length of time required for this preliminary process depends upon the physical condition of the patient and the season of the year. A robust patient, accustomed to out-of-door life, may be started at once in the warm weather, while a hectic, emaciated, bed-ridden one must be handled more cautiously.

It is advised that before the treatment is instituted observations be made of the temperature, pulse and of the blood and urinary findings. Patients with fever or nephritis must be watched most closely, and it may be necessary in these cases to give the sun exposures more gradually.

In general, the sun baths should be discontinued at least an hour before and two hours after the mid-day meal. During the hot summer months radiations should not be given during the middle of the day, for at this time the sun's rays are very intense and depressing and likely to cause a rise in temperature, nausea, rapid pulse, headache, and other constitutional disturbances. The very early and very late hours of the day are the most desirable and beneficial. In Switzerland, Rollier begins his sun cure at 6 a.m., and finishes at 9 or 10. This routine is undoubtedly practical in Europe, but it would not be feasible in this country with existing labor conditions.

Special care must be taken that no breeze strikes the body, as chilling may cause irreparable harm. This danger may be avoided by the use of windbreaks or special bed. This is most important and cannot be too strongly emphasized. Some of the bad results which are reported as due to heliotherapy are very likely due to the fact that these precautions are not taken. With proper wind protection any patient can be insolated with immunity. After each insolation the patient may be given a sponge bath and be rubbed with spirits of camphor, and if the skin is very sensitive some vegetable oil, such as cocoanut or olive oil, may be applied.



On admission. X-ray. Two years and three months later.

CASE 8300. T. B. left knee, with subluxation and flexion deformity.

The following description of the method to be employed in heliotherapy is a modification of that prescribed by Rollier:

First Day: The patient, reclining on a bed and with eyes protected from the sun by means of colored glasses or towel and the head by a linen cap or bonnet, is taken to the sun-porch. The only clothes worn are trunks, and depending on the season of the year he is covered either with sheets or blankets. Only the feet are exposed and radiated on this day. They are insolated for periods of five minutes three times during the day with intervals of about one hour.

On admission. Two years later.

CASE 2319. T. B. lumbar spine.

Second Day: Each insolation period of the feet is increased to ten minutes, and more of the body treated by insolating the lower extremities from the knees to the ankles for five minutes.

Third Day: The feet are radiated for 15 minutes at each period. The time of insolation from the knees to ankles is increased five minutes, and still more of the lower extremity treated to insolation by exposing from the hips to the knees for five minutes.

Fourth Day: The entire lower extremity is now receiving sunlight in the following doses: hip to knees, 10 minutes; knees to ankles, 15 minutes, and feet, 20 minutes. The abdomen is now insolated for five minutes.

Fifth Day: The insolation periods are now: abdomen, 10 minutes; thighs, 15 minutes; legs, 20 minutes, and feet, 25 minutes. The last part of the body to receive its initial insolation, the chest, is now exposed for five minutes.

The periods of insolation are correspondingly increased five minutes each day upon each previous subdivision of the body until upon the twelfth day the longest exposed part receives a total radiation time of three hours, the exposure periods being, for the feet, 60 minutes; knees to ankle, 55 minutes; thighs, 50 minutes; abdomen, 45 minutes, and chest, 40 minutes. From this date to the sixteenth day the insolation period of the feet remains 60 minutes. The remaining subdivisions are increased by five minutes each day until each subdivision receives 60 minutes at a radiation period. On the seventeenth day the insolations are reduced to one morning and one afternoon period of 90 minutes each. If this length of insolation is contraindicated the time may be shortened, and if the indications warrant it may be increased to four hours per day by slow progression. The anterior and posterior surfaces should receive the same amount of sun radiation, if possible the total daily exposure being divided equally between the two surfaces. In certain instances where the patient, either because of pain or general physical condition, cannot be turned to permit insolation of the posterior surface, the anterior surface alone is insolated, and the time awaited when the physical condition will permit the turning of the body, when the same procedure is repeated as outlined above. In the spring and fall, when the sun's intensity is not strong, patients in good physical condition may be insolated, with a beginning period of 10 minutes instead of five, and the progression of insolation carried out in this ratio.

During insolation, sinuses and ulcers are covered only by a wire screen so as to allow the rays of the sun to play upon the lesions. In the evening they are cleaned with alcohol and a dry dressing is applied. If during the preliminary treatment the sun bath is interrupted for any reason, the insolations should be resumed at a stage earlier than that at which it was stopped.

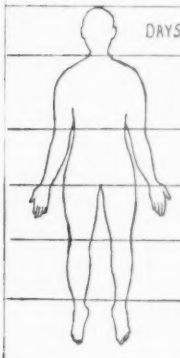
The above method of insolation is the most satisfactory, but to some it has been found to be somewhat complicated. We have, therefore, tried a simpler method in which the whole body is exposed from the first day, and have found it satisfactory with robust patients during the warm weather. On the first day the patient, using the same eye and head protection as with the above method, is insolated for a period of two minutes, three times in the morning and three times in the afternoon, at hour intervals. Each of the six exposure periods is increased two minutes daily for 15 days, when the total daily radiation will have reached three hours. The number of exposures may then be reduced to two in the morning and two in the afternoon, with hour intervals. Strong and robust patients may take four hours of sun a day, but three hours is sufficient for the majority of cases.

In the treatment of osteo-articular tuberculosis all casts are discarded so that the sun may have access to the whole body, and particularly the local lesion. This has led many to believe

that immobilization is dispensed with in sun cure. As has been brought out before, immobilization is one of the requisites in solar radiation. We cannot emphasize too strongly that the Rollier method of heliotherapy is not mere

mentation progresses the skin becomes supple and velvety, and free from blemishes. It should be stated that the progress of patients is in direct proportion to the intensity of pigmentation, for they do not seem to show much im-

AUTHOR'S MODIFICATION OF ROLLIER'S SCHEMATIC DIAGRAM OF INSOLATION.



DAYS	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th
	T.I.D.	T.I.D.	T.I.D.	T.I.D.	T.I.D. 5 Min.	T.I.D. 10 Min.	T.I.D. 15 Min.	T.I.D. 20 Min.	T.I.D. 25 Min.	T.I.D. 30 Min.	T.I.D. 35 Min.	T.I.D. 40 Min.	T.I.D. 45 Min.	T.I.D. 50 Min.	T.I.D. 55 Min.	T.I.D. 60 Min.	D.I.D. FULL EXPOSURE AS ON THE 16TH DAY, ONLY THAT THE INSOLATION IS DIVIDED INTO A MORNING AND AN AFTERNOON PERIOD OF 60 MINUTES EACH. THIS SCHEME IS FOLLOWED THROUGH THE REMAINDER OF CURE
				5 Min.	10 Min.	15 Min.	20 Min.	25 Min.	30 Min.	35 Min.	40 Min.	45 Min.	50 Min.	55 Min.	60 Min.	60 Min.	
			5 Min.	10 Min.	15 Min.	20 Min.	25 Min.	30 Min.	35 Min.	40 Min.	45 Min.	50 Min.	55 Min.	60 Min.	60 Min.	60 Min.	
		5 Min.	10 Min.	15 Min.	20 Min.	25 Min.	30 Min.	35 Min.	40 Min.	45 Min.	50 Min.	55 Min.	60 Min.	60 Min.	60 Min.	60 Min.	
	5 Min.	10 Min.	15 Min.	20 Min.	25 Min.	30 Min.	35 Min.	40 Min.	45 Min.	50 Min.	55 Min.	60 Min.	60 Min.	60 Min.	60 Min.	60 Min.	
TOTAL DAILY EXPOSURE.	15'	30'	45'	60'	75'	90'	105'	120'	135'	150'	165'	180'	180'	180'	180'	180'	180'

DIVIDE THE TOTAL EXPOSURES INTO EQUAL AMOUNT OF INSOLATION TO THE ANTERIOR AND POSTERIOR SURFACES OF THE BODY WHEN POSSIBLE.

HOUR OF EXPOSURE																	
	A.M.	8:45	8:45	8:45	8:45	8:45	8:45	8:45	8:45	8:45	8:45	8:45	8:45	8:45	8:45	8:45	8:45
	A.M.	9:30	9:55	10:00	10:05	10:10	10:15	10:20	10:25	10:30	10:35	10:40	10:45	10:45	10:45	10:45	
	P.M.	3:15	3:15	3:15	3:15	3:15	3:15	3:15	3:15	3:15	3:15	3:15	3:15	3:15	3:15	3:15	3:15

NOTE: THE ABOVE IS THE USUAL METHOD TO BE EMPLOYED UNLESS CONTRA-INDICATED BY THE GENERAL PHYSICAL CONDITION OF THE PATIENT, LOCATION OF THE LESION, AND REACTION TO SUNLIGHT

insolation, but a combination of sun treatment along with specially devised methods of fixation by rest in bed, by traction, and by positions arranged by hard pillows, a combination which increases the resisting power of the patient, preserves or restores the natural function of the joint, and prevents or corrects deformity. Here the orthopedist finds his true field in tuberculosis work; and in those cases where deformities and faulty articulations could not be prevented, through too long delay in commencing the treatment or any other cause, he may employ surgery to great advantage, provided that he awaits the opportune time.

On days when sun cure is not feasible an air bath is given by exposing the naked body to the air. The duration of this air exposure depends upon the amount of tan, the season of the year, and the physical condition of the patient. In winter patients with deep pigmentation may be exposed five to fifteen minutes at a time with no ill effects. We have allowed some children to play in the snow for as long as an hour at a time. At this point I wish to emphasize the importance of wind protection, when giving air baths during cold weather. It is absolutely necessary that no breeze should strike the body. Even when exercising, well-protected places must be selected, unless the days are very calm.

In the course of heliotherapy the skin gradually takes on a bronze hue, then a copper color, and finally a beautiful chocolate brown. As pigprovement until definite tanning takes place. The brunette type tans best, while the freckled and red-haired tend to burn repeatedly without tanning, although with perseverance, pigmentation will develop in the latter type.

One of the gratifying features of the effects of sun treatment is the prevention of atrophy. Visitors are usually much surprised at the perfect physical development and relatively firm musculature of patients who have been in bed for years. This muscle development plays an important rôle in maintaining position, both when the patient is under treatment and when up and about and convalescing.

The effect of solar radiation on the general condition of the patients is most favorable. The haggard and spiritless appearance gives way to an attitude of cheerfulness and animation. There is a rapid alleviation of pain, and usually within two weeks it completely disappears, the temperature rapidly comes down to normal, the appetite returns, weight and strength are taken on rapidly, and the blood picture improves. Both the hemoglobin and the red cells increase. Leucocytosis, if present, becomes reduced, and an actual lymphocytosis takes place.

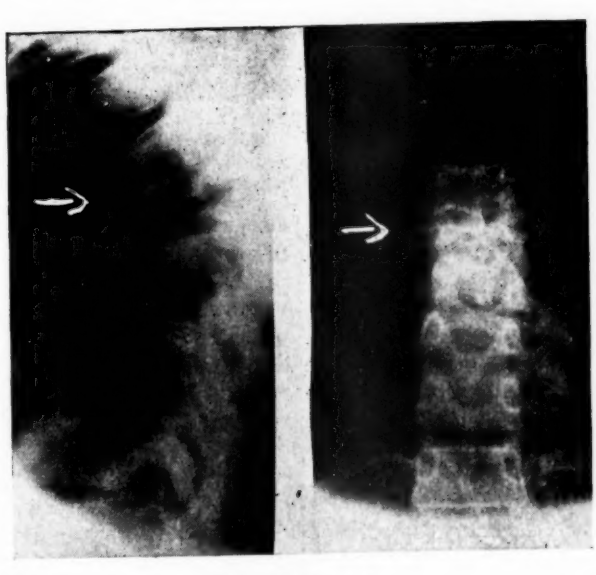
Balderrey and Barkus of our research laboratory have found that solar radiation increases the alkalinity of the blood, the increase being in direct proportion to the intensity of the tanning. How this is brought about is not exactly known, but they reasonably suppose that it may

be brought about by a diminished concentration of the carbon dioxide in the blood and alveolar air. Neither is it known what part of the solar spectrum is most active in increasing the alkalinity of the blood. They advance the theory that it may be due to those rays of the spectrum most active in producing heat, inasmuch as it has been observed that heat will increase the alkalinity of the blood. In support of this theory their most recent experiments have partially substantiated the supposition. Using three portions of the spectrum, namely, the ultra-violet, green, and infra-red, they have demonstrated that with ultra-violet light there is no change in the alkalinity of the blood, with green (wave-lengths 480-700) there is a rise in the alkalinity, and with infra-red rays the increase in alkalinity is most marked. The body temperature under these different wave-lengths responded as follows: normal throughout exposure to the ultra-violet; increased 0.4 of a degree under the green and two degrees under the infra-red.

On admission.

Twenty-two months later.

CASE 3460. T. B. of dorsal spine with paralysis of lower limbs.



X-ray showing lesion.

The outstanding local result in cases of osteoarticular tuberculosis which are not too far advanced is the gradual, partial, or complete restoration of motion in the affected joint. As contrasted with surgical measures which tend to-

ward diminished function and production of ankylosis, heliotherapy has for its aim the restoration of joint function. The action of the sun upon bone tissue is one of repair. There is an intense recalcification and frequently sequestra are spontaneously expelled. The effect upon lymph nodes is one of gradual shrinkage, and very often broken-down glands become absorbed or calcified. Effusions are rapidly absorbed. This effect has been repeatedly observed in peritonitis and pleurisy. Although abscesses often require repeated aspiration, their final content is either absorbed or becomes calcified. The discharge from sinuses is definitely increased in the beginning, but this is followed by the formation of healthy granulations and a gradual closing of the sinus. Surgical interference is justified when abscesses threaten to rupture spontaneously. This should be relieved by aspiration through healthy tissue as often as the indication presents itself. Occasionally when thick pus prevents aspiration a medical incision is indicated. After evacuation pressure is applied to prevent bleeding into the abscess cavity which, if it occurred, would provide a rich culture medium. Although more extensive operations may occasionally be necessary to correct deformity they should be delayed until the sun has had sufficient time to improve the general condition of the patient, more favorable result being thus assured. It frequently happens that a few months of sun cure changes the whole aspect of cases which at first appear hopeless.

We have discharged from our institution from 1913 to January 1, 1923, 729 cases of extra-pulmonary tuberculosis that remained in the hospital three months or more.

Seventy-eight per cent. of the adults and 18 per cent. of the children discharged showed a clinical pulmonary lesion.

Fourteen per cent. of the bone and joint cases in adults and 21 per cent. in the children had multiple surgical lesions.

Fifty per cent. of the bone and joint cases in adults and 44 per cent. in children had sinuses and secondary infections.

Thirty-six per cent. of the bone and joint cases in adults and 27 per cent. in children had had surgical interference.

Seventy-six per cent. of our joint cases were discharged with partial or full motion.

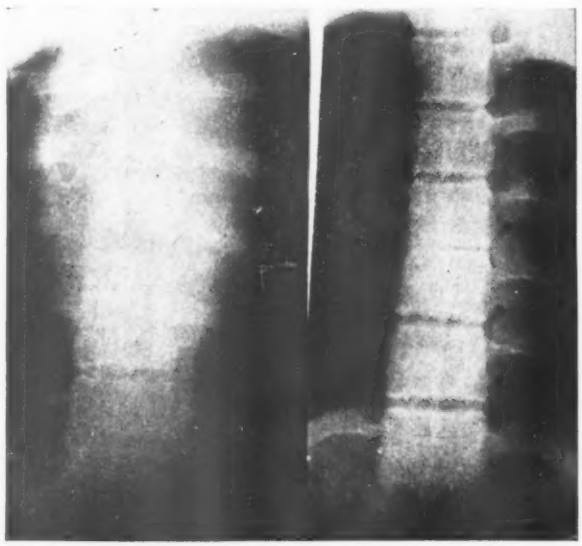
Eighty-three per cent. of those with tuberculosis of the glands were discharged as cured, and practically 100 per cent. of the tuberculous peritonitis cases were discharged as recovered.

Neither the physiologic action of light energy nor its effect upon pathologic processes have been determined; nor has it been proven that any particular portion of the solar spectrum is responsible for the curative properties of sun radiation. Dr. Rollier, up to recently, has attributed the favorable action of the sun to the ultra-violet ray; in fact, one of his strong points in favoring sun treatment in the mountains is that the Alpine sun is more rich in ultra-violet light than the sun in a low altitude. This, no doubt, has been partly responsible for the popularity of the ultra-violet lamps in the treatment of extra-pulmonary tuberculosis. It is our belief that the favorable action of the sun is not due to any particular ray, but to the entire solar spectrum, each ray having its particular action and value. The ultra-violet's principal rôle in the mechanism of sun cure may be to produce pigmentation, with the resulting increased absorption of the luminous and heat rays. These

On admission.

Two years later.

CASE 3405. Osteomyelitis of right and left tibii—right femur.



Showing absorption of paravertebral abscess.

CASE 2801. T. B. dorsal spine.

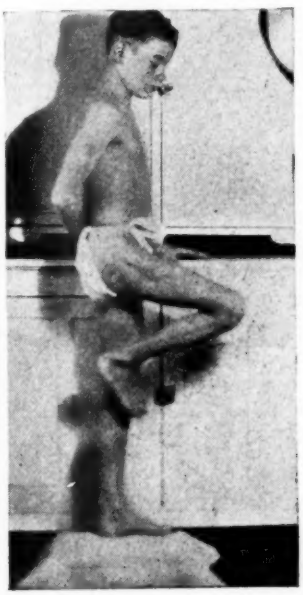
luminous and heat rays may be the active, curative portions of the spectrum.

Balderry and Ewald have found that when the body is exposed to direct sunlight, enough light passes through the body to affect a photographic plate when the body is placed between the plate and the sun. A pigmented skin seems to shorten the time necessary to produce this result.

the use and recommendation of solar therapy in this type of tuberculosis.

Two summers ago, in order to prove or disprove the above-mentioned claims in regard to the treatment of pulmonary tuberculosis with sun cure, we placed under this treatment 50 patients chosen from advanced and moderately advanced cases that were doing poorly under the ordinary sanatorium régime. Some of these

On admission.



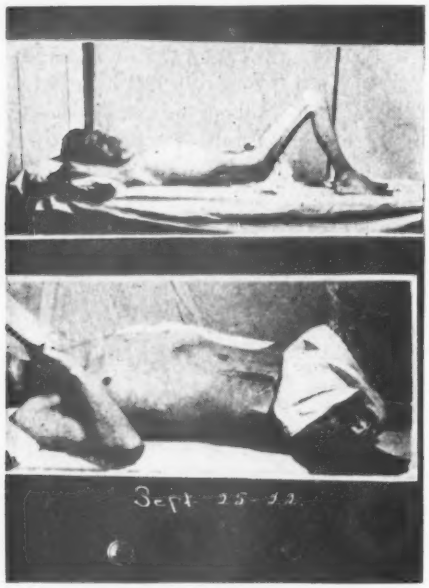
Two years later, showing motion.

Case 2950. T. B. of left hip.

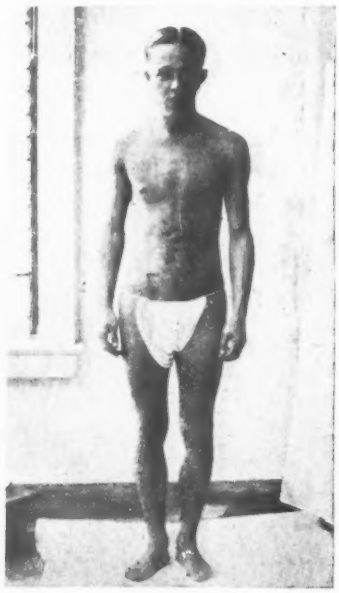
Up to the present, no part of the solar spectrum has been shown to have the same beneficial action as the whole spectrum in the treatment of tuberculosis, and on this account we are trying to develop a lamp that will imitate entire sunlight both in spectral distribution of energy and in actual intensity.

While heliotherapy has been almost exclusively employed in the treatment of so-called surgical tuberculosis, it must not be understood that it is not valuable in other diseases. It is a specific in rickets. It has been most successfully employed in osteomyelitis, anemia, puerperal sepsis, in convalescence from acute febrile diseases, in malnutrition; in fact, in all conditions where the resistance is below par, it proved very valuable in the treatment of infected wounds during the World War.

There is a hesitancy and a doubt in the minds of many who are using heliotherapy as to the advisability of applying it in pulmonary tuberculosis. It is claimed by some that solar radiations are likely to produce hemoptysis, fever, and oftentimes a reactivation of the disease. In reality we have used heliotherapy in the treatment of pulmonary tuberculosis for the last ten years, as 78 per cent. of the adult cases with extra-pulmonary lesions had manifest pulmonary disease, and our results have warranted cases were having a daily temperature of 99 3/5 to 101, and some had had repeated hemoptysis. All the cases responded most satisfactorily. The temperature of those with fever gradually came down to normal. No hemoptysis developed, not even in those that had had repeated hemorrhages. The physical signs showed lessened moisture in all of the cases. The cough and expectoration improved and weight was put on by practically all the patients. While we do not recommend sun cure in acute tuberculosis and in pulmonary tuberculosis with high temperature due to acute complications, such as pleurisy, pyo-pneumothorax, etc., and in cases with very recent hemorrhage, we do not consider a temperature of 100 or 101, hemoptysis, chronic pleurisy, and pyo-pneumothorax as contraindications. We have had brilliant results in pleurisy with effusion and in pyo-pneumothorax. It is found most beneficial in conjunction with artificial pneumothorax. It may be possible that the unfavorable results reported in pulmonary tuberculosis with heliotherapy are due to its improper application. If it is given in small repeated doses and in the early and late part of the day during the summer months, there will be no danger of complications occurring. We must remember that heliotherapy, like all other forms of therapy, unless properly administered,



On admission.



One year later.

Case 3766. T. B. Peritonitis.

On admission.

Two years later.

Case 2414. T. B. of right hand and wrist.

On admission.

Two years later.

X-ray on admission.

X-ray two years later.

CASE 2414. T. B. of right hand and wrist.

may cause untoward effects. Its application must, therefore, be assigned to experienced persons.

The special suitability and effectiveness of sun cure as a treatment for children bears further mention and emphasis. Not having formed set habits of living, they adapt themselves readily and cheerfully to the new routine. Except during very severe and inclement weather they are quite willing to dispense with conventional clothing, and thus they have the tonic effect of air and sunshine on their uncovered bodies, not only during the cure period, but while at study and at play. Then, too, unlike the adult patient, the child has no tendency to worry over the loss of time and opportunity entailed by the somewhat prolonged course of treatment. As a matter of fact, in the cases of children, the time of their stay is not in any sense wasted. Under the care of competent nurses and with the advantage of open-air schools or bedside teaching, as well as the stimulus of companionship of the other children, while not leading exactly the usual life of a child, they are, at least, afforded equal means of mental development and character building, besides being immeasurably benefited physically.

It is to be hoped that the medical profession will persevere in using their influence to create a strong public opinion in favor of sun cure so that in the near future there may be in every community an institution where heliotherapy will be available, not only for those with tuberculosis, but for those with rickets, anemia, for the undernourished, for those convalescing from acute diseases, for those run down physically and mentally, etc. It should be available not only for those already afflicted with disease, but

also for those whose health is threatened. For it must be borne in mind that the prophylactic properties of the sun's rays are just as important, or perhaps more important, than the therapeutic.

In conclusion I wish to emphasize the following points:

1. Extra-pulmonary tuberculosis is only a local manifestation of a constitutional disease, being usually secondary to lung or lymph node tuberculosis, and we must, therefore, treat the disease as a whole, and not its manifestations or complications.

2. Being a disease where resistance is lowered through lack of air and sunshine, excesses, mental and physical strain, and insufficient rest, it should be treated in the country air in environments conducive to good health, cheerfulness and contentment.

3. While fresh air and sunshine are most important curative factors in the treatment of tuberculosis, rickets, and other diseases due to the same predisposing conditions, they are of still greater value in preventing these diseases.

4. The sun is an analgesic and a dispeller of gloom.

5. The sun is a great muscle developer, as seen in the perfect musculature of those cases who have been in bed for years, and hence a very important factor in maintaining good positions and in preventing the development of deformity when the patient is up and about and convalescing. The long-continued use of casts for immobilization leads to the abolition of function through atrophic degeneration of specialized structures.

6. The results of operations in extra-pulmonary tuberculosis have not been sufficiently encouraging to countenance the general application of surgery, whereas the results of sun treatment, both in this country and in Europe, more than justify its use.

7. Sun cure is constructive, while operative procedures are destructive in that by attempting to destroy the focus of disease, the granulation tissue, which serves as a protective wall to the surrounding normal structures, is likewise broken down, opening new areas to infection and increasing the possibility of the disease spreading and developing into acute generalized tuberculosis.

8. Surgical measures destroy and never assist in the restoration of function in a joint, while in heliotherapy our aim is to restore or maintain this function.

9. Surgical interference is justified only in those cases where, in spite of heliotherapy, and the resulting good general physical condition, the local lesion has not shown any satisfactory improvement. It is justified, to correct deformities developed during the course of treatment in spite of all the efforts to prevent them; to provide stability by an arthrodesis in a flail and useless articulation, and to evacuate abscesses, and this only by aspiration or a small incision when the pus is very thick. It is justified in renal tuberculosis of the advanced stage, when it is better to remove the kidney.

10. Artificial light in the treatment of extra-pulmonary tuberculosis at its best is only a poor substitute and of questionable value.

THE SEROLOGIC TREATMENT OF LOBAR PNEUMONIA*

BY EDWIN A. LOCKE, M.D., BOSTON

INTRODUCTION

It seems a safe statement that in no disease have such a multitude of specific remedies been advocated as in pneumonia. None of these forms of treatment has stood the final test of clinical experience, and until recently the physician has found himself as helpless before the case of pneumonia as a half-century ago. The failure to establish the value of such measures which have so frequently been heralded as specifics in this disease, is easy to find. But a few have had even a reasonable theoretic basis, and none have been the result of sound experimental study. All have been empirical. With few exceptions, also, they have not been subjected to accurately controlled observation. This is true not only of chemotherapeutic measures, but also of the very numerous vaccines and sera which in recent years have been widely exploited. In but two, namely, the Type I antipneumococcic serum of the Rockefeller Institute for Medical Research, and the "antibody solution" of Huntoon, has a satisfactory scientific experimental test been applied. The discussion of this paper will, therefore, be confined to these two therapeutic agents.

A brief review of a few of the more fundamental researches in immunity directly bearing on the serum treatment of pneumonia will serve, I hope, to show on what a thoroughly scientific foundation such methods rest. The discovery by Pasteur, that the inoculation of chickens with attenuated cultures of chicken cholera did not kill the animals, but produced a varying degree of artificial immunity, is one of the foundation-stones on which the modern science of immunity is built. This principle was shortly afterwards applied in experiments with, at first, attenuated and, later, sublethal doses, of virulent cultures of pneumococci, in an effort to actively immunize various animals against infection with this organism. It was shown that animals thus treated with sublethal doses were easily protected against lethal doses of virulent cultures.

Immediately following these demonstrations many attempts were made to produce, experi-

*Read before the Philadelphia County Medical Society, Nov. 14, 1923.

mentally, a passive immunity in animals by the use of serum from animals actively immunized by the method of Pasteur. The possibility of such a passive immunity was finally clearly established by Behring and Kitasato (*Deutsch. med. Wochen.*, 1890, xvi, 1113), in 1890, when they published their brilliant results in the study of diphtheria and tetanus immunity induced by soluble toxins. Efforts to produce similar results in the case of infection with the pneumococcus failed, for it was soon observed that the method is possible only in those affections in which a circulating toxin (exotoxin) is produced. It remained for later investigators to show that in pneumonia the disease does not depend on the action of a true exotoxin and that the favorable action of the immune serum is due to other protective substances.

G. and F. Klemperer (*Berl. klin. Wochen.*, 1891, xxviii, 833) conducted a long series of immunity experiments on animals, using the pneumococcus, and finally tested the therapeutic animal serum, thus obtained, on healthy individuals as well as pneumonia patients. A total of six cases of pneumonia were treated with the immune serum, all of whom recovered. These authors wrongly attributed the favorable action of the immune serum to the presence of some specific antitoxic substance similar to diphtheria antitoxin. This work is interesting, however, as it represents the first attempt at the administration of an antipneumococcic serum in man.

Pane (*Central. f. Bact. u. Parasitenkunde*, 1897, xxi, 664), in 1897, published the very important results of his studies regarding the antipneumococcic properties of serum obtained from animals immunized against this organism. He considers from his observations that, unlike cholera, diphtheria and tetanus, there are, in the case of pneumonia, no appreciable free circulating toxines, and emphasizes the tendency in pneumonia for the bacteria to multiply and spread all through the organism by way of the blood channels, but only in the late stages of fatal cases. Evidence is given from his experiments that toxins, if produced in pneumococcus infection, are without significant influence. He concludes that antipneumococcic serum should be antibacterial and not antitoxic in its action. Serum of high potency was obtained from asses, of less strength from cows, and weakest from guinea-pigs. In animals, Pane found it necessary to administer the serum intravenously, early during the course of infection and in large doses. In all cases the immune serum was found to be specific in its action. The antipneumococcic serum from all these animals possessed marked power to agglutinize the pneumococci, but the vitality of the pneumococcus was able to resist the action of the serum for a long time.

In the same year Mennes (*Ztschr. f. Hyg. u. Infektionskr.*, 1897, xxv, 413) published the results of a series of careful studies on the mechanism of immunity against the pneumococcus in rabbits. The most important observation made by the author was that the serum of rabbits immunized either by the toxin or cultures of pneumococci, in contrast to normal serum, contains some substance which renders the pneumococci very susceptible to phagocytosis. This increased phagocytosis was shown to be due to the action of the serum on the bacteria and not on the phagocytic cells. As in the case of normal serum, the serum of the immunized animals was found to possess no bactericidal power.

Neufeld and Händel (*Zeitschr. Imm.*, 1909, iii, 159; *Arb. d. d. Kais. Gesundh. Amt.*, 1910, xxxiv; *Berl. klin. Wochen.*, 1912, xlix, 680), in a series of papers appearing from 1909-1912, record the results of their studies in pneumococcus immunity, which form the basis of the researches of more recent years. These investigators were the first to recognize that different strains of pneumococci reacted differently to tests with immune serum and, on the basis of these serologic characteristics, suggested a division of the pneumococci into distinct and fixed types. They further showed by animal experiments that immune serum possesses absolutely specific properties, inasmuch as it is only protective against infection with the types of organism producing the immunity. On the basis of these results, Neufeld and Händel attempted the production of an antipneumococcic serum. Horses and asses were injected with repeated and large doses of killed pneumococci, the immunologic properties of the serum tested by inoculation into mice and, finally, the standardized serum was administered to patients suffering from pneumonia. They advise against the use of the serum subcutaneously as its action is too slow, and advocate that it be given intravenously in large doses. By this method they obtained very favorable results. Great emphasis is laid on the general infection resulting from the infection in the lung, and not the lung condition itself, as the dangerous feature of the disease. The improvement following the use of immune serum, they believe to be due to the overcoming of this general infection by the antibodies present in the immune serum.

To Cole and his associates at the Rockefeller Institute, is largely due the great advancement in recent years in our knowledge of the nature of the infectious process in pneumonia, and their brilliant researches have contributed greatly to the solution of the problem of the production of an effective specific therapy for this disease. I shall speak of only a few of these and other reports which have a particularly direct bearing on the subject under discussion.

Dochez and Gillespie (*Jour. Amer. Med. Assn.*, 1913, lxi, 727), working at the Rockefeller Institute for Medical Research, confirmed the

general observations of Neufeld and Händel with regard to the classification of pneumococci, and succeeded in establishing a definite grouping of the various types by a very careful study of their biological reactions. Their division of pneumococci, according to their cultural and immunologic characteristics, into the three fixed types called I, II, and III, and a heterogenous group IV, marks one of the most important steps in the progress of specific therapy of pneumonia.

Wadsworth (*Amer. Jour. Med. Sci.*, 1904, new series, cxxvii, 851), in a somewhat earlier paper, gives an exhaustive review of all previous attempts to induce pneumonia in animals, and a report of his own experiments of a similar nature. The efforts of very numerous workers had, up to this time, failed to produce a typical lobar pneumonia in normal lungs of animals, and even in lungs after trauma (cold, various irritants, direct injury, etc.) only very uncertain results were obtained, though a fatal pneumococcus septicemia often resulted. By using very susceptible animals (rabbits), partially immunizing them to the pneumococcus, and by the injection of relatively virulent cultures of the pneumococcus into the soft tissue between the rings of the trachea, Wadsworth succeeded in producing a typical lobar pneumonia without the general septicemia usually resulting when animals, not so immunized, were similarly injected. The lesions in the lung in pneumonia may be regarded, according to Wadsworth, as a "protective mechanism" which often serves as an effective barrier against the spread of the infection and, especially, a bacteremia.

Lamar and Meltzer (*Jour. Exp. Med.*, 1912, xv, 133) succeeded, by deep intrabronchial injections of 10-15 c.c. of a pure culture of pneumococci, in producing experimental lobar pneumonia in 42 successive dogs. Sixteen per cent. died. In both the fatal and non-fatal cases the disease conformed to the lobar pneumonia of man, though the cases terminating favorably ran a more mild and shorter course. In a few cases these authors also succeeded in producing a lobar pneumonia by the intra-bronchial injections of Pneumococcus mucosus and Friedlander's pneumobacillus. In all cases the amount of infectious material injected seemed to bear a direct relationship to the mortality.

Others have since successfully repeated these experiments. Cole (*Arch. Int. Med.*, 1914, xiv, 57) showed that the results in such experiments depend largely on the degree of virulence of the cultures used, thus confirming Wadsworth's early observations. If the virulence is low, recovery may take place without the development of a pneumonia, or, if too virulent, the animal often dies of septicemia with similar negative results in the lungs.

Much more recently, Blake and Cecil, working in the Bacteriological Laboratory of the Army Medical School, Washington, have made very exhaustive studies on experimental pneumonia in monkeys, which have thrown much additional light on the whole problem of lobar pneumonia and, in particular, greatly clarified our conception of immunity in this disease. The first of these reports (*Jour. Exp. Med.*, 1920, xxxi, 403) deals with the production of lobar pneumonia in monkeys. An infection of the lung identical with lobar pneumonia in man was repeatedly induced by very small intratracheal injections of virulent pneumococcus cultures, but could not be produced by the infection of the mucous membrane of the upper respiratory tract or by subcutaneous inoculations. They conclude that "lobar pneumonia is bronchogenic in origin." These same authors (*Jour. Exp. Med.*, xxxi, 445) found complete confirmation of these conclusions in the pathologic study of the lung lesions in 40 monkeys with experimental pneumonia. Invasion of the lung takes place, according to Blake and Cecil, at the root of the lobe and spreads along the course of the interstitial tissue and lymphatics. These conclusions, as to the path of infection, seem absolutely conclusive from the evidence presented and are, furthermore, in accord with clinical observations and pathologic studies in man.

Equally important facts regarding active and passive immunity against pneumococcus infections in monkeys, and bearing very directly on serum therapy in man, have been worked out by Blake and Cecil (*Jour. Exp. Med.*, 1920, xxxi, 191, 657, 685; *Ibid.*, 1920, xxxii, 1). Subcutaneous inoculation with pneumococcic vaccine (killed bacteria) did not prevent subsequent infections of the lungs, although the course of the disease seemed somewhat modified. Pneumococcus septicemia could not be produced following such subcutaneous vaccination. They conclude that "vaccination may induce a humoral immunity without protecting against intratracheal infection." Vaccination with small doses of living virulent, and large doses of avirulent pneumococcus, Type I, produced a definite active immunity. An attack of Type I pneumococcus pneumonia in monkeys was found to produce an active immunity sufficient to protect them against a second infection with the same organism, as well as a slight degree of cross immunity against the other fixed types. Similar protection did not follow experimental Type IV pneumonia. The results of their studies in passive immunity is stated by them as follows: "In experimental pneumococcus Type I pneumonia in monkeys the intravenous injection of Type I antipneumococcus serum exercises a specific therapeutic effect, frees the blood promptly and permanently from pneumococci, shortens the course of the disease, and greatly moderates its severity. Of five monkeys inoculated intratracheally with lethal doses of pneumococcus Type I, all developed pneumonia, and all recovered following the administration of Type I antipneumococcus serum, while the con-

trols died." The early use of the serum and frequent dosage is urged.

A very important consideration is the relation of septicemia in pneumonia to the mortality. In what percentage of cases a small number of organisms may be present in the blood is not known. The important fact is that an increasing number in the blood stream is always an "ill omen," as emphasized by Cole, and that the outcome of the disease probably depends largely on the degree of the blood invasion. Sutton and Sevier (*J. H. Hosp. Bull.*, 1917, xxviii, Nos. 311, 315) have made a very careful study of the bacteremia in pneumonia and conclude that "the incidence of septicemia runs parallel with the mortality." Among their cases with repeated negative blood cultures, only 7 per cent. died. Cole and others give quite similar figures. The defensive mechanism of the infected individual is probably concerned with several factors but chiefly, it would seem, with the degree of blood invasion.

The nature of the action of the immune serum has been the subject of much earnest investigation but is still not fully understood. There is no evidence that it exerts any direct influence on the lesions in the lungs. Its main action seems, in general, to be an antibacterial one. While not strictly bacteriolytic in the sense that the organisms are actually killed, the serum has the effect of inhibiting their growth, causing them to agglutinate and render them susceptible to phagocytosis by the polynuclear leucocytes. Bull and Bartual (*Jour. Exp. Med.*, xxxi, 26, 3, 233) have studied exhaustively the pneumococcidal action of the serum of animals immunized both actively and passively against the pneumococcus, and conclude that "opsonization and phagocytosis are the essential agents" concerned in the favorable action of immune serum. Cole suggests the possibility that immune serum may also possess some antitoxic power though it cannot be demonstrated. Clinical observations on the action of antipneumococcic serum in man confirm these conceptions. In favorable cases the blood may be freed of pneumococci shortly after the first dose and protective substances promptly appear in the serum.

TYPE I. ANTIPNEUMOCOCCIC SERUM

By means of a long series of careful experiments conducted at the Hospital of the Rockefeller Institute for Medical Research since 1910, Cole (Monographs of the Rockefeller Institute for Medical Research, vii, 1917) and his associates have thoroughly studied the whole problem of active and passive immunity against pneumococcus infections in animals and the possibility of the production of an effective antipneumococcic serum. The serum of horses immunized against virulent cultures of pneumococci of the three fixed types has been standardized and carefully tested as to its therapeutic effects on animals suffering from experimental pneumococcus pneumonia due to the homologous type. In the case of Type I pneumococcus, a serum of high potency can readily be prepared which has marked curative powers when administered to animals with pneumonia due to Type I infection. In the case of Type II serum the results are much less satisfactory, and in the Type III serum, entirely negative. The successful experimental results obtained with Type I antipneumococcic serum led Cole to test the value of this serum in man. By his method it is possible to produce a serum of high and constant potency which can be accurately standardized. Such a serum has been employed in the treatment of Type I pneumonia at the Rockefeller Institute for more than ten years and rather widely throughout the country in various clinics. The Type I sera, available from various sources, are regularly tested by the Public Health Service, thus insuring the potency of the preparation.

METHOD OF ADMINISTRATION OF TYPE I SERUM

Cole (*Nelson Loose-leaf Medicine*, I, 203) advises the following technique. Since the preparation is a horse serum and is given intravenously in large doses, the danger of anaphylactic reaction must always be kept in mind. A careful history should be taken in each case with reference to any previous history of asthma or hay fever. In all cases, in order to avoid any possibility of anaphylactic shock from the serum, it is imperative that the reaction of the individual should be tested. This is effected by the intracutaneous injection of .02 c.c. of the serum, diluted with salt solution in the ratio of 1:10, and controlled by a similar injection of normal salt solution. Sensitization to horse serum is indicated by the appearance of a local reaction about the site of the injection, the intensity of the local signs, in a general way, indicating the degree of sensitization. A positive reaction is generally considered sufficient contraindication to the use of the serum, although it is possible to desensitize the individual and then to administer the serum with reasonable safety. If no local reaction takes place within an hour, the test may be considered negative. Even in the event of a negative reaction, however, it has been the custom at the Rockefeller Hospital to give a single desensitizing dose of 0.5 to 1 c.c. of horse serum subcutaneously as a precautionary measure before giving the immune serum intravenously. Great emphasis is laid on the early and frequent administration of the serum, and in sufficient quantity. It is well to test every pneumonia patient to horse serum when first seen, in order that the serum may be given without delay as soon as the diagnosis of Type I infection is made. The serum is given intravenously in 80 to 100 c.c. doses at intervals of eight hours until the temperature is normal. In Cole's first

series of 107 cases the average total dose required was 250 c.c. The 120 cases of my series who recovered received an average total dose of 273 c.c., while the 25 fatal cases received an average total of 302 c.c. Fourteen of this latter group were given 600 c.c. or more. It is important that the serum be kept at body temperature during the administration, and Cole recommends that it be diluted with an equal amount of normal salt solution. It should be introduced very slowly at first, to avoid the possibility of reaction, and the time for the total injection should not be less than 30-40 minutes. If, after becoming normal, the temperature again rises, the serum should be resumed immediately.

In spite of the negative sensitization test and the initial desensitization injection of 1 c.c. of horse serum, severe shock, probably anaphylactic in nature, may very rarely occur during the intravenous injection of the immune serum. The onset is sudden, with the symptoms of chill, cyanosis, intense dyspnea, great anxiety and profound collapse. Its appearance is always alarming, but, so far as I am aware, no fatal case has been recorded. Should this occur, 10 m. of a 1:1000 solution of adrenalin, subcutaneously, and morphia are usually sufficient to give prompt relief.

Within a half-hour following the intravenous injection a more or less severe reaction very frequently occurs, the so-called "thermal reaction." The patient has a chill followed by a sharp rise in temperature. Cyanosis is often marked and the pulse accelerated. Although causing the patient considerable discomfort, the reaction is without dangers. The phenomenon is simply the reaction to a foreign protein and has no especial significance. It is less apt to occur if the serum is given very slowly. The opinion has frequently been expressed that the most striking benefits from the serum are in those cases where a severe reaction occurs. Cole has observed no such advantage, and is strongly of the opinion that the reaction should, if possible, be avoided. This is my impression from clinical experience.

From seven to fourteen days after serum has been given, a characteristic and striking group of symptoms, known as "serum disease," frequently appears. The symptoms may be very slight and last only a day or two, or be very severe and prolonged for a week or ten days. The chief manifestations of this reaction are a rather sharp rise in temperature, often to 102° or 103°, a varying degree of malaise, anorexia, general enlargement of the lymph nodes, swelling, redness, pain and tenderness in many of the joints, and, in marked cases, an intense urticarial reaction with edema and itching. The leucocyte count often rises to ten or twenty thousand and the urine may show a trace of albumin. It is a source of great discomfort to the patient, but is of no consequence otherwise. Treatment is strictly symptomatic.

RESULTS OF TREATMENT WITH TYPE I ANTIPNEUMOCOCCIC SERUM

It is very unfortunate that, notwithstanding the fact that the serum has been widely used, the published results are still very meager. In a previous report (Locke, *Jour. Amer. Med. Assn.*, 1923, lxxx, 1507) these results have been tabulated and discussed. The most important reports have come from the Rockefeller Institute, and in discussing the merits of this method of treatment it seems best to quote in some detail the observations of Cole and his associates.

In cases of pneumonia which progress unfavorably there is clinically an increasing toxemia and usually an extension of the pneumonic process in the lungs. Bacteriologic studies have also shown an increasing septicemia which is probably the cause of the toxemia. It is the influence on these conditions in which Cole finds the action of serum most definite. In cases reacting favorably to the serum, the blood is soon freed of bacteria, often following the first dose. The process in the lung does not extend. The general symptoms of toxemia yield promptly in that the subjective symptoms in general rapidly diminish. The patient becomes clearer mentally, the color improved, the temperature and leucocyte count lowered, the pulse slowed, and the respiration slower and deeper. Indeed, in some instances the changes are so striking as to simulate crisis. In other words, these clinical results are an exact duplication of the results obtained experimentally in animals. In our series of 145 serum-treated cases at the Boston City Hospital we observed such favorable results in only a comparatively small percentage of cases and, therefore, do not feel that our experience altogether confirms Cole's observations.

It cannot be too often emphasized that judgment as to the effects of a therapeutic agent, especially in the case of an acute self-limited disease like pneumonia, where sudden and dramatic changes for the better in the clinical picture may occur at any time, is not altogether trustworthy unless checked by the observation of simultaneous control cases. Exactly the same sudden improvement often comes about in the controls, which, if it occurred in the treated, would certainly be credited to the favorable action of the preparation given. In our series no case which recovered after serum had any extension of the pneumonic process subsequent to the injections, and the average number of lobes involved in all treated cases was slightly less than in the control group of cases not receiving serum.

The final test of the value of serum treatment in pneumonia lies in the figures of mortality. Unless the figures are based on a very large series of cases, however, they are apt to be misleading and are of little, if any, value except when compared with those from a control series of untreated cases due to the same type of pneu-

mococcus. In pneumonia, especially, the general mortality is so variable that the control cases should be simultaneously observed and in the same wards. Figures based on small series controlled in this manner are of far greater value than those from a much larger group uncontrolled.

Again, mortality statistics of treated cases of pneumonia are almost meaningless unless such factors as the age of the patient, the day of the disease when treatment was begun, the size and number of doses of serum and, finally, the results of repeated blood cultures are taken into account in the analysis. It is a well-known fact that the mortality in general from lobar pneumonia increases quite regularly from about 10 per cent. in childhood to from 50-60 per cent. in old age. Obviously, then, the tabulation of results with reference to the factor of age is necessary in order to properly evaluate the figures of death-rate. The results of animal experiments, as well as clinical observations, indicate the importance of the administration of serum at the earliest possible period of the disease. Theoretically, also, since the serum under discussion has an action which is primarily anti-bacterial, it must follow that it is more effective when given early in the course of a developing bacteremia.

Bloomfeld (*Jour. Amer. Med. Assn.*, 1923, lxxxi, 17, p. 1437) has recently published a very suggestive study, from the Johns Hopkins Hospital, of 198 typical cases of Type I lobar pneumonia with reference to the influence of the bacteremia on the final outcome of the disease. The figures presented emphasize the well-known relation between the development of the bacteremia and mortality, discussed earlier in this paper. Among the cases with positive blood culture at some time during the course of the disease, the mortality was 55.5 per cent., while in the cases with persistently negative cultures the mortality rate was only 18.1 per cent. Bloomfeld suggests that the success of serum treatment does not depend so much on the day of the disease, when given, as on the presence or absence of bacteremia. In other words, the serum may be effective at any time during the course of the pneumonia, provided the blood is sterile. The serum therapy appears to have been without results in the cases with positive blood cultures, the mortality being even higher in the treated than in the untreated cases. On the other hand, in the group of cases with persistently negative blood cultures, the mortality among the serum-treated was 0, whereas in the untreated it was 16.5 per cent. Bloomfeld concludes that Type I antipneumococcic serum is of distinct value in all cases, irrespective of the day of the disease, provided the blood is free of bacteria. Further observations along this line may well furnish important criteria for the employment of serum.

In a recent paper (Locke, *loc. cit.*) I have tabulated the case fatality-rate for all published cases of Type I lobar pneumonia treated with this serum. There are a total of 906, of which 358 were reported from military hospitals, and 548 from civilian hospitals. The former group, which showed an average mortality-rate of 9.5 per cent., is excluded from the discussion as without value, for several reasons: First, the cases were drawn exclusively from a selected group of vigorous men between the ages of eighteen and thirty-one, who, as a class, are known to show a very low mortality from pneumonia (about 10 per cent.). Second, in no instance were the results of treatment checked by a control group of cases not receiving serum. Third, many of the cases occurred during the epidemic of influenza and in epidemic centers, which makes it seem questionable if they are comparable with pneumonia as ordinarily observed. It is interesting to note, however, that since the mortality in general from pneumonia in the Army and Navy is about 10 per cent., these reports from thirteen military hospitals do not offer any suggestion of benefit from treatment with the specific serum.

The latest available figures from the Rockefeller Hospital (Cole, *Nelson Loose-leaf Medicine*, 1: 269, 1920) show that a total of 195 cases have been treated with a case fatality-rate of 9.2 per cent. Such a figure is very striking, indeed, and its significance cannot be denied. Its full meaning, however, is not clear, since, unfortunately, the series has been run without any controls and, so far as I am aware, without any attempt to analyze the mortality-rate with relation to such important factors as are mentioned above. The combined figures from other civilian hospitals comprise 353 treated cases with a mortality-rate of 19.3 per cent. The general mortality-rate in Type I lobar pneumonia varies from 18 to somewhat above 20 per cent., hence the above figure of 19.3 must be regarded as normal. When Cole's 195 cases are combined with those from other civilian hospitals, the total of 548 cases gives a mortality-rate of 15.7 per cent. From February, 1919, to April, 1922, 145 Type I pneumonias were treated with serum on the Pneumonia Service at the Boston City Hospital. The mortality-rate in the first 75 was 17.3 per cent., in the remaining 70 cases, 17.1 per cent. A control group of 71 cases was run with the last 70 treated cases, every alternate case being given serum, and the mortality-rate was 16.9 per cent.

It is evident that, so far as the mortality figures are concerned, those of Cole stand alone as furnishing any evidence favorable to the use of the specific antipneumococcic serum in the treatment of Type I pneumonia. Nevertheless, in the face of a mortality-rate of 9.2 per cent. coming from such a source as the Rockefeller Hospital, and the abundant evidence, experimentally, of the soundness of the principles underlying this method, there seems no possible justification for the position, taken by so many, that Type I antipneumococcic serum is without

value in the treatment of pneumonia due to this organism. It seems to me very probable that further experience with this serum will indicate clearly some more precise method of selecting cases for this form of specific treatment.

PNEUMOCOCCUS ANTIBODY SOLUTION (HUNTOON)

In 1920, Huntoon (*Tr. Phil. Path. Soc.*, 1920, xxii, 75; *Jour. Imm.*, 1921, vi, 117, 123) published the results of his researches on the nature of antibody and of his efforts to prepare a purified serum-free solution of protective substances suitable for therapeutic use. He worked largely on antipneumococcic serum and succeeded in producing such a solution essentially free from horse serum to which he gave the name "pneumococcus antibody solution." The method of preparation is briefly as follows: Horses are actively immunized against Types I, II, and III pneumococci by repeated injections of the emulsified bacteria and the protective powers of the serum tested on mice. This immune serum of proved protective power is then mixed with an equal volume of emulsion of the three types of pneumococci and allowed to stand at 37° C. for one hour. The sediment contains the antibody combined with the antigen of the pneumococci, while the solution contains most of the serum protein. Thorough washing of the sediment removes all but very minute traces of the horse serum. Further treatment of the sediment with salt solution and sodium bicarbonate causes a dissociation of the pneumococcus antigen and antibody, the latter being held in solution. The mixture is again centrifugalized and the supernatant fluid passed through a Berkefeld filter, which removes much of the remaining proteins. The final solution contains antibody, sodium chloride, sodium bicarbonate, very minute trace of horse serum, and a small amount of bacterial protein. It is now carefully tested culturally to insure its sterility, and accurately standardized with respect to its protective powers when injected into mice. Huntoon has shown that the solution of antibody possesses the same potency as the original serum.

Cecil and Larsen (*Jour. Amer. Med. Assn.*, 1922, lxxix, 343; *Tr. Ass. Am. Phys.*, 1922, xxxvii, 405) have recently made a very important report on the use of this solution at the Bellevue Hospital. A total of 917 pneumonia cases are included in the group studied, of which 91 per cent., or 834, were due to the pneumococcus. The remaining 83 cases were chiefly due to the Streptococcus hemolyticus or Streptococcus viridans. Of the 834 pneumococcus cases, 424 were treated with antibody solution, while the remaining 410 were used as controls. No selection was made, all cases in the treated wards diagnosed as pneumonia being given from 50 to 100 c.c. intravenously at once, and the dose repeated once, twice or three times daily until the temperature remained permanently below 100°. The average total dosage was 250 c.c.

The apparent influence of the antibody solution on the duration of the disease was striking. Of the 118 cases treated on or before the fifth day, 28.8 per cent. had normal temperature on the fifth day, while only 7.9 per cent. of the 201 control cases admitted on or before the fifth day showed normal temperature by the fifth day. The total duration of fever likewise showed a similar advantage for the treated cases. Complications were slightly more common in the untreated cases. The tabulation of mortality-rate in the two series is distinctly lower in the treated group. Type I cases show a death-rate of 13.3 per cent. in the treated and 22.2 per cent. in the controls; Type II, 27.7 and 40.3 per cent.; Type III, 39.7 and 40 per cent.; Type IV, 16.4 and 24 per cent. The death-rate for the four types combined is 21.4 per cent. for the treated (424 cases) and 28.3 per cent. for the controls (410 cases). It will be seen that the greatest difference occurred in the Type I cases, although it was but slightly less in Type IV. In Type II the difference was nearly as great, but in Type III the figures are the same in the two series. The cases of streptococcus pneumonia gave no response to the antibody solution.

Conner (*Tr. Ass. Am. Phys.*, 1922, xxxvii, 387; *Am. Jour. Med. Sci.*, 1922, clxiv, No. 6, 832) reports quite similar results in 116 cases treated by the same method in the New York Hospital. Unfortunately, the treated cases were not run with a parallel control series. The case fatality-rate in Conner's total of 116 cases is 10.6 per cent., and for the four types 13, 22.2, 33.3, and 4.1 per cent., respectively. These figures correspond rather closely to those of Cecil and Larsen except that in the case of the Type IV pneumonias the percentage mortality was surprisingly low. Conner studied the behavior of the leucocytes after antibody injections and found no evidence of any significant results. In many instances Conner noted a very striking influence on the clinical course of the disease, following this treatment, but only slight, if any, influence on the resolution in the solidified lung.

Both of the above-mentioned authors describe a constant and often very severe thermal reaction of the type so common during the treatment with Type I antipneumococcic serum and following shortly after the injection of the antibody. The symptoms which appear within twenty to forty minutes after the injection are: a violent chill lasting in extreme cases for a half hour, intense dyspnea and cyanosis, rarely even wild delirium, and hyperpyrexia, in one instance recorded by Cecil and Larsen reaching 113.1°. Conner reports one, and Cecil and Larsen three fatalities apparently due directly to the antibody solution.

Such extreme results, however, were not observed except in the aged, and when the solution was given late in the course of a very severe infection. The symptoms noted are characteristic of foreign protein reaction and can probably be explained as caused by the bacterial protein

in the antibody solution. As suggested by Cecil and Larsen, it would seem desirable to attempt the production of a concentrated antibody solution free from pneumococcus protein, which could undoubtedly be given in large amounts without danger of such untoward effects. Until the possibilities of this severe foreign protein reaction can be eliminated, it would seem that its usefulness is very limited.

Undoubtedly, the antibodies, in the solution under discussion, are chiefly concerned in producing the beneficial effects observed, but other factors must also play some part, since the striking effects seen in Type IV pneumonia cannot be accounted for on the basis of antibody action. It has been suggested that the effects may, in part at least, be due to a non-specific reaction, but in support of such a theory no real evidence, experimental or clinical, can be cited. For the present, then, the question must remain unanswered.

The evidence of the clinical value of the antibody solution, presented in the work of such observers as Cecil and Larsen, and Conner, is impressive. While justly conservative in their estimate of the interpretation of the results obtained, all of these authorities are agreed that the preparation is a very important therapeutic agent in the treatment of lobar pneumonia.

The advantages of the Huntoon preparation are several. In the first place, its chief merit lies in the fact that it is polyvalent. Secondly, it can be administered as soon as a diagnosis of pneumonia is made, without the considerable delay necessary in the case of Type I antipneumococcic serum to type the sputum and test the patient for foreign protein sensitization. Serum sickness and true anaphylactic shock never appear.

Cecil and Baldwin have found that antibody solution, given subcutaneously to monkeys with experimental lobar pneumonia, produced the same effects as when injected into the blood stream. When injected in the same manner into healthy rabbits the antibody was found in the blood within three or four hours after the injection. Encouraged by these results, they have, during the past year, employed the antibody solution subcutaneously in the wards of the Bellevue Hospital. Dr. Cecil has very generously given me permission to quote from a report which is to be published shortly.

Only those patients were selected for treatment and as controls who were admitted within forty-eight hours of the onset of the pneumonia. The usual dose was from 100 to 200 c.c., repeated in ten or twelve hours and continued for two or three days as the condition of the patient indicated. The average total dose was 650 c.c. In all, forty-nine pneumococcus pneumonias were treated. A moderate local reaction follows the injection and the temperature occasionally shows a rise of one or two degrees, but no general symptoms of foreign protein reaction have been seen.

The same favorable results, and to the same degree, appear to follow the subcutaneous as the intravenous administration of the antibody solution, according to Cecil and Baldwin. The mortality-rate in the 49 treated cases was 16.3 per cent., while in the fifty-three untreated controls the figure was 35.8 per cent. Cecil and Baldwin find no contraindications to the subcutaneous use of antibody and believe it to be the method of choice.

During the coming winter the antibody solution is to be carefully tested therapeutically in large hospitals in New York, Philadelphia, Boston, Cincinnati and Chicago under uniform methods formulated by the Influenza Commission of the Metropolitan Life Insurance Company (Drs. Rosenau, Park and McCoy). The results of this combined study should furnish ample data from which to form an exact judgment of its value in the treatment of pneumonia.

ARTHROPLASTY OF THE KNEE JOINT*

BY W. RUSSELL MACAUSLAND, M.D., BOSTON

Surgeon-in-Chief, Orthopedic Department, Carney Hospital

THE first attempt to mobilize a stiff joint was made in 1826, and from that time many opinions regarding indications for operation have been expressed, and many methods of operative procedure have been developed. There were many failures among the early cases, chiefly because of the lack of surgical asepsis. In spite of the development of better surgical technique, there have continued to be many failures due, I believe, to a lack of appreciation of the following important requirements: (1) the proper selection of the case; (2) the time for operative interference; (3) the correction of deformity before surgical intervention; and (4) careful attention to the details of operative technique and after-treatment. It is certain that arthroplastic procedures are not applicable to all stiff joints, and I doubt if they ever will be. Yet, with a better knowledge of the causes of our failures, we are fast approaching a time when a definite opinion may be given before operation, as to the possibility of success. Arthroplasty, however, still represents a special field in surgery, and may not be used, at least at the present time, as a routine procedure.

Arthroplastic measures for the ankylosed knee joint must be approached with caution, for not only must the new joint be satisfactory as to function, but it must be absolutely free from pain and sensitiveness, and adaptable to weight-bearing. Without this stability a flail joint results, which is far more of a handicap

*Read, by invitation, before the Orthopedic Section, Academy of Medicine of New York, November 16, 1923.

than a knee ankylosed in good position (five to eight degrees flexion). A flail joint necessitates the wearing of a brace to permit walking, which, however efficient, will not prevent the production of an arthritis with its accompanying pain and soreness, caused by undue strain. If lateral hypermobility results, the operation, in my opinion, is a failure. Such mobility shows lack of technical skill in the removal of too much bone, and in the preservation of ligamentous structures, as well as improper modeling. I should rather fail to secure mobility than to obtain lateral hypermobility by this operation.

ETIOLOGY

Ankylosis may be of two types, bony or fibrous. Bony ankylosis is usually either the result of traumatic injuries that have produced excessive callus, or the result of infections. The infectious process may be hemolytic or it may be the result of sepsis introduced directly into the joint, or extended into the joint from a near-by disease. Whatever the cause of the ankylosis, a bony bridge may form between the condyles and the tibia and a true bony union result.

Fibrous ankylosis results most frequently from a chronic polyarthritic infectious process, giving rise usually to a sensitive joint. If the loss of motion is due to the involvement of the periarticular structures, conservative treatment may be of benefit in restoring function.

INDICATIONS

In general, the indications for mobilization depend upon the disability of the patient. I believe that arthroplastic measures should be limited to the cases in which bony ankylosis has occurred, or in which there is such limited motion that the joint suffers constant strain.

Arthroplasty should not be considered in cases in which there is good function with a stiff knee. In the presence of such complications as two stiff knees or a stiff knee and a stiff hip, a definite indication for operation, on one side, at least, is presented.

Mobilization should not be attempted until sufficient time has elapsed for the eradication of the original infectious process, as there is danger of re-infection if intervention is made too soon. Deformity of any considerable extent should be corrected before an operation is attempted.

OPERATIVE TECHNIQUE

The first essential is absolute asepsis. The operation should be performed under thorough hematosis, with the use of the Esmarch bandage and tourniquet.

The usual preparation is given both legs from the ankle to the groin. I believe it is best to remove the fascia from the opposite leg, thereby minimizing the extent of the operation on the ankylosed leg, as well as making it possible to remove more fascia without disturbing the external support of the knee joint.

The incision is made from just below the inner attachment of the patellar tendon, curving slowly over this point to the middle of the external cartilage, and then directly up the outer side of the leg just above the mid-horizontal line, a distance of five to ten inches from the joint proper. (Fig. 1.) As much fat as pos-

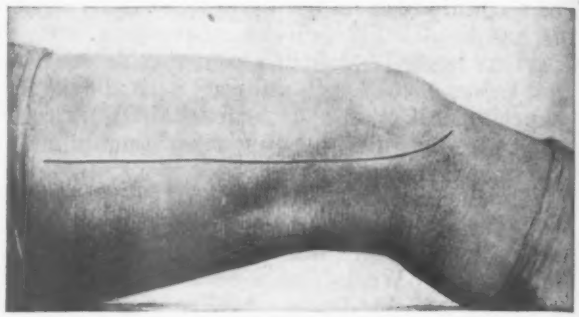


Fig. 1.—Kocher's incision.

sible is taken with this incision. After clamping the skin-edges with towels, the skin is dissected to the anterior surface of the leg, exposing the patellar tendon, patella, and the tibial tubercle.

A curved incision is then made through the fascia, beginning in the mid-anterior line, about five inches above the patella, and running between the patella and outer condyle to just below the knee joint.

The quadriceps tendon is then exposed and elongated. This elongation not only allows better joint exposure, but affords a proper lengthening when we later place the leg in flexion fixation. (Fig. 2.) This lengthening may also be

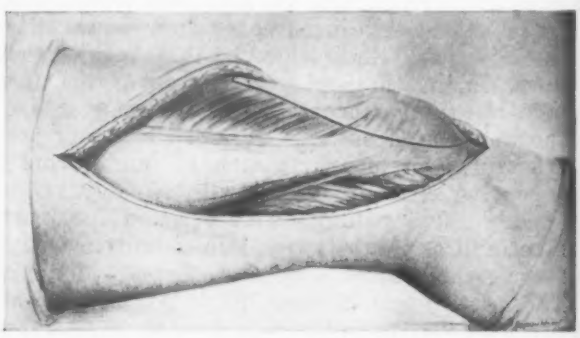


Fig. 2.—Incision through fascia and capsule including division of the quadriceps tendon.

done by the Bennett method. After the patella has been raised from the femur, taking with it the lower cut portion of the quadriceps tendon, it is forcibly retracted to the inner side of the knee, with its ligamentous attachments intact.

(Fig. 3.) Some surgeons detach a piece of the tibial tubercle in order to increase the exposure,

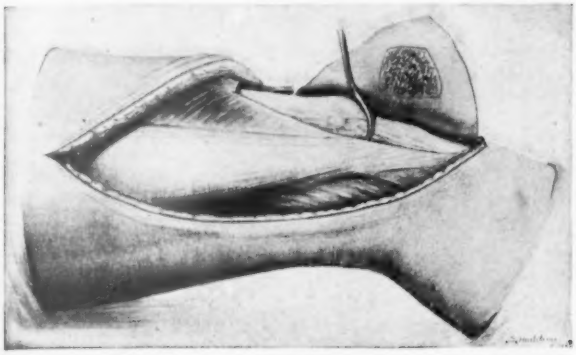


FIG. 3.—Displacement of the patella with inner capsule inward and downward. Freeing of the joint line.

but I have found this procedure unnecessary when the quadriceps tendon is elongated in the beginning. There are also many difficulties when this piece is removed, such as delayed or faulty union, which complicate the convalescence.

The patella raised, the skin flap of the patella drawn inward, the joint cavity is then uncovered. If the patella is hyperplastic, that is, abnormally large, it may be narrowed by removing a third of it anteroposteriorly from the outer and inner surfaces. It is a mistake to remove the entire patella.

It is important to leave a well-defined spine between the tibial condyle, as well as to cup out the upper tibial surface, which is necessary to stabilize the joint and prevent lateral mobility. (Figs. 4 and 5.)

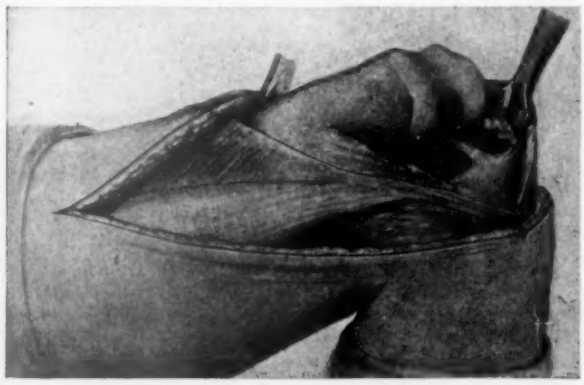


FIG. 4.—Luxation of the joint and remodeling of the femoral and tibial surfaces. Note the exaggeration of the spine of the tibia.

In forming the new joint the natural conformation of the femoral and tibial surfaces must be followed. Putti's instruments are excellent for the modeling of the surfaces. (Fig. 6.) Separate the tibia from the femur by means of a gouge, the diameter of which corresponds to that of the femoral condyle of the adult. First, the external condylar mass is cut, then the internal, with the instrument inclined at such an angle that an approximate semi-circular concavity is formed. As the operation proceeds, an assistant flexes the knee so that the last lamellae uniting the epiphysis of the posterior condylar region are fractured. By

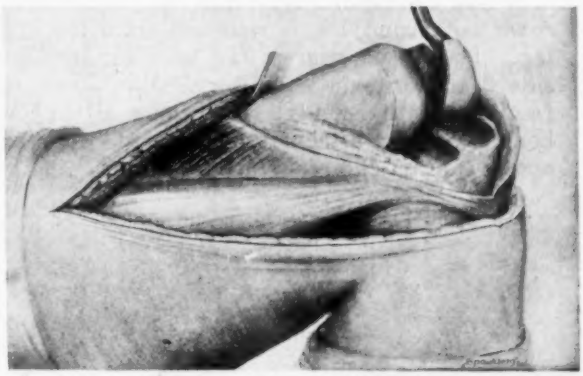


FIG. 5.—Luxation of the joint and remodeling of the femoral and tibial surfaces. Note the exaggeration of the spine of the tibia.

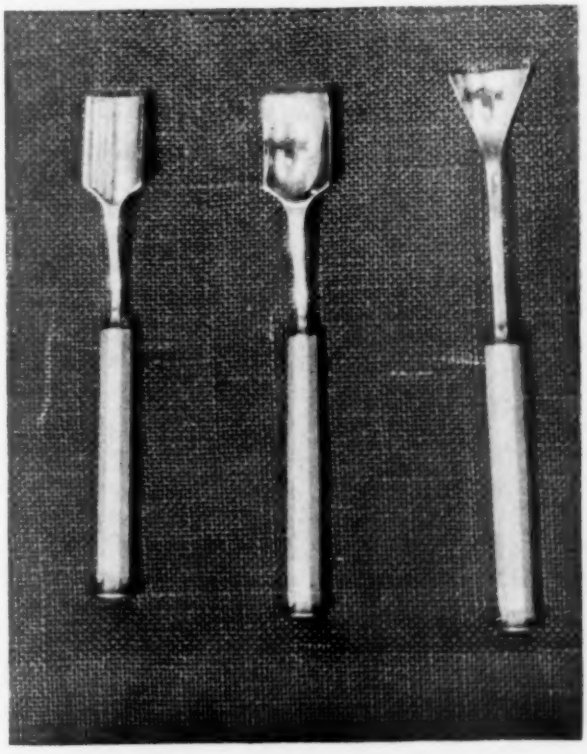


FIG. 6.—Putti instruments.

means of the same gouge, about one centimeter of bone is removed from the epiphyseal surfaces. Two glenoid cavities of the same curvature as the condyles are created in the tibia. After the surfaces have been carefully modeled, the joint ends are brought together to make sure that sufficient bone has been removed. The surfaces must glide smoothly, and if necessary more bone may be removed. A space into which the

patella will articulate is cupped out. Files and rasps are used to smooth the surfaces. This filing, besides smoothing, drives a bone dust into the spongy parts, which aids in hemostasis, as well as in lubricating the surfaces of the sectioned edges to which the aponeurosis of the transplant will adhere better.

A large piece of fascia lata, ample enough to cover both condyles, is removed from the other leg. The fascia nearest the knee on the outer side is thickest and most serviceable. Sew this fascia over the condyles, covering all exposed bone well, and attach it posteriorly two inches above the articular surface. (Figs. 7 and 8.)

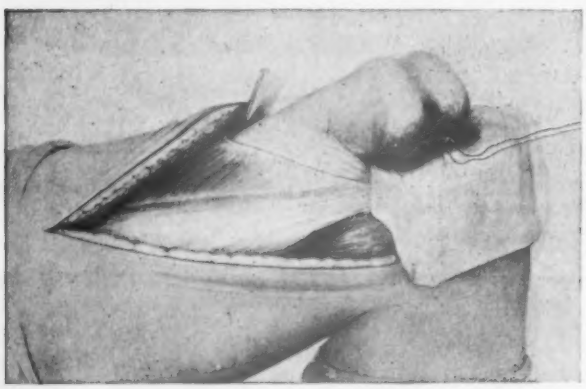


FIG. 7.—Attachment of the fascia flap to the posterior capsule.

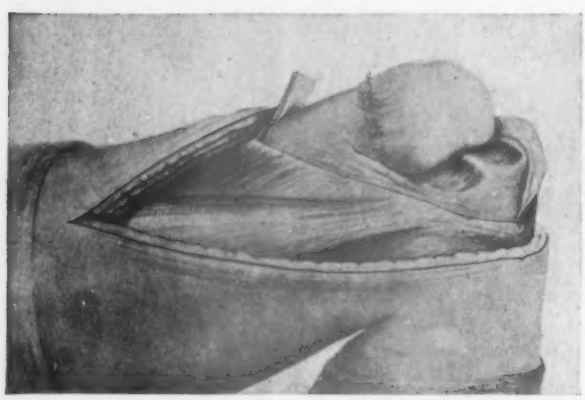


FIG. 8.—Completion of the suture about femoral end.

The femur is then adjusted to the tibia, and the patella replaced. The outer fascia is united with interrupted chromic catgut.

The elongated quadriceps is strongly sutured and the skin closed with interrupted catgut. (Fig. 9.) A plaster is applied from the toe to the groin with the knee in 35 to 40 degrees flexion, and the leg placed in an elevated position in bed. Opiates are often necessary and may be freely used.

AFTER-TREATMENT

The temperature, pulse, and pain are carefully watched for any signs of infection.

The cast is split for dressing in two weeks and the leg placed in a ring caliper with 35 degrees flexion, so arranged that this may be changed

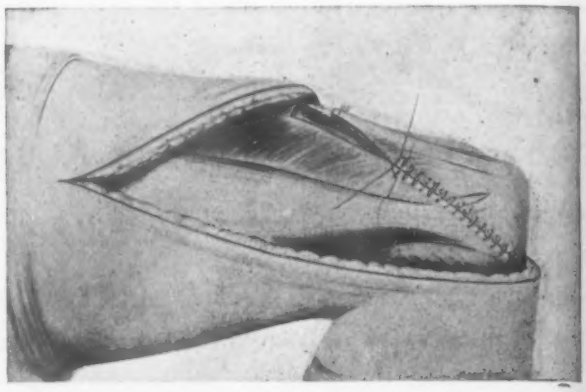


FIG. 9.—Suture of the capsule and elongated quadriceps.

and passive motion slowly started. By means of an overhead extension the patient begins to make passive motions in bed, two or three times a day. The intrinsic apparatus of White's (Fig. 10) has been found most useful. The

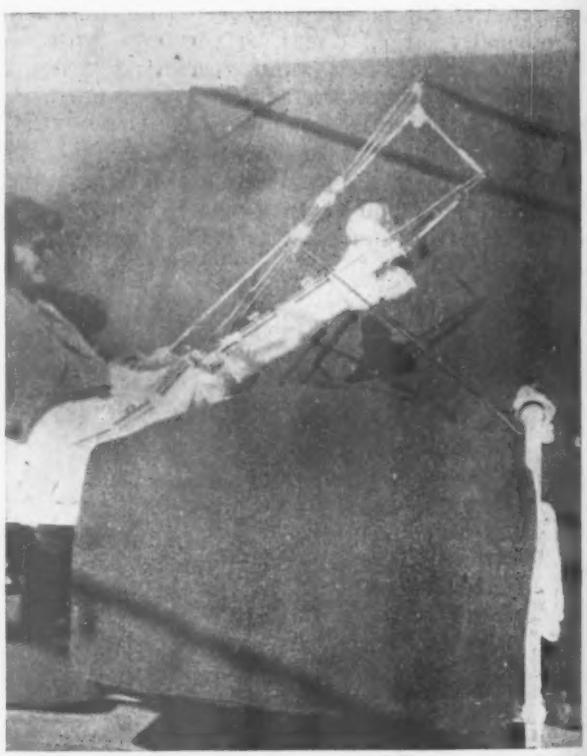


FIG. 10.—Intrinsic apparatus of White's.

motion should be gentle at first and increased gradually, guided by pain and sensitiveness.

Active motions are attempted, and, if possible, started about the third to fifth week.

Massage is started in five to six weeks for thigh and calf, and the patient may usually walk with crutches about the sixth week.

No actual weight-bearing is allowed until the lateral ligaments have tightened, and a caliper may be applied to assist weight-bearing, depending wholly upon the sensitiveness and pain on use.

FIG. 11.—Case 1. F. O'K. Showing weight-bearing 12 years after mobilization.

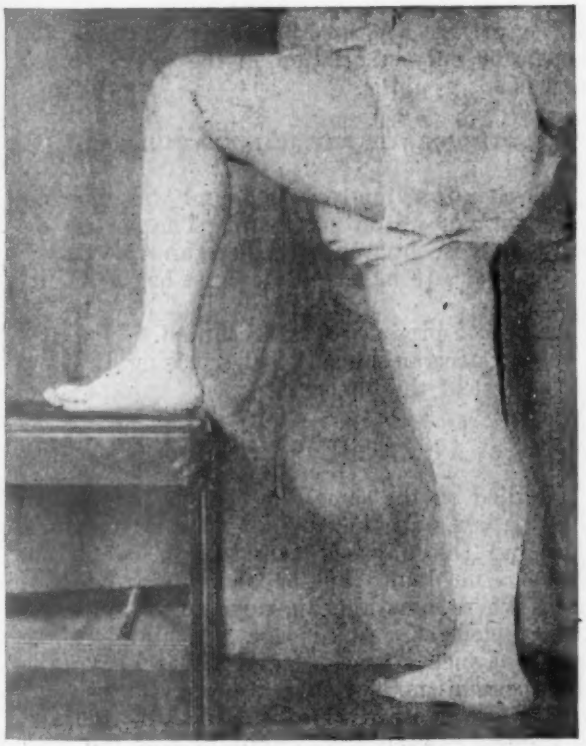


FIG. 12.—Case 1. F. O'K. 95° flexion, 12 years after arthroplasty.

CASE

F. O'K. Age thirty-one. In 1909, the patient had an acute Neisserian infection in the left knee. The opening of the joint resulted in an ankylosis. The knee was in good position, but there was no motion between the tibia and the femur. The patella also was ankylosed to the femur. Manipulations were unsuccessful in obtaining motion. Arthroplasty was advised.

December 14, 1910, the knee was operated according to the technique described.

December 23, 1910, the patient was out of bed, and had daily dressings.

January 5, 1911, the cast was removed, and a posterior shell applied.

January 7, 1911, there was a small amount of weight-bearing. The patient was using crutches.

January 19, 1911, the patient was discharged from the hospital, in a leather leglet with limited motion. Stretching and daily hot fomentations were to be continued.

January 3, 1923. Twelve years after the arthroplasty, the patient wrote me that he had no trouble at all with the knee. He can do everything, and sometimes has to think which is the operated knee. He has gained forty to fifty pounds. The leg is straight, and there is good power in the quadriceps. Extension is complete, and flexion to 95 degrees is possible. There is absolutely no lateral mobility. (Figs. 11 and 12.)

CONCLUSIONS

If the technique of the operation is carried out in detail in properly selected cases, a joint with 90 degrees motion and good stability may be expected in a good percentage of cases.

The joint, to be functional, must be free from soreness, pain, or strain on use, the presence of which would result in the production of an arthritic process in later life.

The retention of motion is a very important factor. My statistics show that good motion has been retained for over ten years, and after hard daily use.

For details of the history of arthroplasty of the knee, as well as for details of arthroplastic technique in general, the reader is referred to my article on ankylosis published in *Surgery, Gynecology and Obstetrics*, September, 1923.

THE CHILD HEALTH MAGAZINE

Mother and Child, for the last four years the official publication of the American Child Health Association, became, with the January issue, *The Child Health Magazine*. With the change in name comes an increase in size and a change in form. The Association is to be congratulated on this first step in transforming a pioneer publication into a national journal of child health activities.

Case Records
of the
Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY
RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D.
F. M. PAINTER, ASSISTANT EDITOR

CASE 10061

An American teamster of thirty-seven entered December 3.

F. H. Good.

P. H. Negative except for measles in childhood. His wife had had one living child and one miscarriage.

Habits. He drank two glasses of beer and one of whiskey daily, and had a rare spree. He had had gonorrhea twice, also a chancre on the penis.

P. I. A year before admission he gradually began to get short of breath without known cause. He had to give up work for a few months. He then went to work again, but was again obliged to stop, and since June had done no work. He had been up and about the house, but was unable to climb a flight of stairs without stopping. For the past few weeks he had been getting worse. His legs had swelled so that he could hardly get his shoes on. A hard dry cough with a little frothy white sputum had kept him awake for the past few nights. At times he vomited with hard coughing. He urinated usually once at night.

P. E. A well nourished man propped up in bed, somewhat cyanotic, breathing rapidly and coughing a good deal. Mucous membranes cyanotic. Feet and hands cold. Teeth neglected. Some pyorrhea. Throat slightly reddened. Tonsils somewhat enlarged. Pea sized glands in the neck, axillae and groins. Apex impulse of the *heart* localized in the fifth space five inches from the midsternal line, one and a half inches outside the nipple line, of moderate force. Left border of dullness corresponded. No enlargement to the right. At the apex a continuous murmur replaced the first sound. Every few beats a loud sharp sound was heard with a questionable presystolic murmur. In the axilla a systolic and diastolic were heard. All over the precordia was a very loud and long to-and-fro murmur, loudest over the aortic area and transmitted to the vessels of the neck. P_2 greater than A_2, not accentuated. Marked retrosternal dullness from the clavicles to the cardiac area, about three inches wide. No pulsation noticed. Pulses irregular, of small volume and tension. *B.P.* not recorded. Artery wall just palpable. Very slight excursion of brachials. *Lungs.* In the back dullness from the angle of the right scapula to the base, with diminished fremitus and breath sounds. Numerous fine moist râles at both bases. *Abdomen.* Liver dullness from fifth rib to three inches below the umbilicus in the right nipple line, one inch below in the midline; large, smooth, hard and sharp. *Genitals, pupils* and *reflexes* normal. *Extremities.* Moderate soft edema of lower legs and ankles. On the right buttock about an inch from the anus was an area of induration an inch in diameter with a small hole from which a little serum could be squeezed.

T. 97.1°. *P.* 120. *R.* 29. *Urine* not obtained. *Blood* normal.

The patient was given a purge and morphia gr. 1/4. About an hour after the morphia was given it was noticed that his respiration was quiet and his pulse good. Ten minutes later he suddenly vomited and dropped back on his pillows dead.

DISCUSSION

BY DR. RICHARD C. CABOT

NOTES ON THE HISTORY

The present illness is a cardiac history for which the only suggestion in the previous history is his syphilis.

NOTES ON THE PHYSICAL EXAMINATION

Whether that loud sharp sound was the first sound or not we do not know. The aortic second sound is apparently rather faint.

They were thinking, as we must be, of aneurism.

The blood pressure is not recorded.

"No Corrigan pulse" is surprising in view of the rest of the history.

DIFFERENTIAL DIAGNOSIS

He died on the same day that he entered, so that we have only the original entrance examination and the physical examination to go on. There is no doubt that he died of cardiac disease. There is nothing to suggest that there is a kidney element. At his age we know but two causes of such a type of heart disease,—syphilis and rheumatism. The suggestion of the previous history is certainly syphilis. We have nothing to suggest rheumatism. Syphilis hits the arch of the aorta and the aortic valves quite often,

and in about nineteen cases out of twenty produces regurgitation only. But we have had three cases in this hospital during the last twenty years in which there was definite syphilitic stenosis as well as regurgitation. So that the absence of the Corrigan pulse does not in any way rule out syphilis. I do not see how we are going any farther. We have evidence of disease at the aorta. We have evidence of what may be disease at the mitral. On the other hand it can be explained perfectly well as an Austin Flint murmur without any disease at the mitral. So that the whole thing can be explained under a syphilitic hypothesis.

On the other hand it can be explained as rheumatic disease of both the mitral and aortic, with stenosis of both valves. There is no possible way in which we can prove either of those hypotheses; it is a toss-up, as I see it.

In favor of syphilis is the fact that he had no trouble until he was thirty-six. It is perfectly possible to get rheumatism in childhood and have no symptoms until thirty-six, but it is unusual. But rheumatic infections in childhood usually show themselves, and rheumatic infections usually are childhood infections. He has had no angina, which often comes with syphilitic aortitis, and to that extent there is evidence against it. We have no evidence of syphilis elsewhere in the body. We have no Wassermann, so no evidence one way or the other. He has slightly enlarged glands in his neck, but not enough to strengthen any suspicion of syphilis.

Does the sudden death tend to help us at all as to the cause of his real trouble? I do not see that it does. It could be due to pulmonary embolism or a coronary thrombosis from the rheumatic type of trouble. It could be due to the same causes from the syphilitic, as far as I see. So that I cannot reason to either diagnosis with any certainty. On the whole, if I had to toss a copper I think I should say syphilis. Dr. Means, which way would your guess go?

DR. J. H. MEANS: A little bit against syphilis, I think. It seems to me the evidence presented in the physical examination is more suggestive of mitral valve disease than of aortic. If there were stenosis of the aortic valve sufficient to produce regurgitation I think we should feel a palpable thrill there. I do not see any mention of such. I should want to know a little more about the chancre that he had, whether that actually was syphilis or whether it might have been chancroid. He had gonorrhea, he might have had chancroid, of course. It seems to me we see a good many cases which turn out to be rheumatic cases even as old as thirty-seven in whom we get no history of rheumatic infections or of previous breaks. I cannot make a diagnosis. I should be inclined to favor rheumatic mitral disease just a little more than syphilis.

DR. CABOT: Is there any third possibility I should consider? Is it possible that Dr. Richardson will say this is neither of the things that we have been considering? I cannot think of any third. But I shall not be in the least surprised if he says it is neither one of the two lesions that Dr. Means and I have mentioned.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Aortic regurgitation.
Mitral regurgitation.
Hypertrophy and dilatation of the heart.
Fatty liver?
Specific aortitis?

DR. RICHARD C. CABOT'S DIAGNOSIS

Aortic stenosis and regurgitation.
Syphilitic aortitis?

ANATOMICAL DIAGNOSIS

1. Primary fatal lesions

Chronic endocarditis of the aortic valve. (Stenosis and insufficiency.)

2. Secondary or terminal lesions

Hypertrophy and dilatation of the heart.
Chronic passive congestion of the lungs, liver, spleen and kidneys.
Ascites.
Arteriosclerosis, moderate.

3. Historical landmarks

Chronic pleuritis.

DR. RICHARDSON: The heart weighed 720 grams. The mitral, tricuspid and pulmonary valves were negative. The aortic valve showed a typical chronic endocarditis deforming the valve, with secondary hypertrophy and dilatation of the heart, chronic passive congestion, ascites, and a slight amount of arteriosclerosis. No lesions of syphilis were made out.

DR. CABOT: It is notable how many signs of mitral disease we have here, yet no mitral lesion at necropsy. We must call it a Flint murmur.

CASE 10062

First entry. An Italian shipping clerk of fifteen was admitted November 30.

F. H. Not obtained.

P. H. June 30, a year and a half before admission, he came to the Out-Patient Department, where tonsillectomy and adenoidectomy

were advised. An appointment was made but was not kept. He reported later that the operation was done at his home. The following May he had an attack similar to the present one lasting two hours.

P. I. The morning of admission he had sharp pain in the right lower quadrant, in the afternoon becoming severe and cramping. He vomited several times.

P. E. Negative except *abdomen* slightly rigid, spasm and tenderness in the right lower quadrant, some tenderness about umbilicus.
T. 100°. *P.* 140. *R.* normal. Leucocytes 18,000.

Operation was done the day of admission. Three days later the boy showed signs of pneumonia in the left chest. He did well, however. The type of pneumonia was very peculiar. He had slight non-productive cough, a few fine râles at the right base behind, and some dullness at the left base behind. December 14 the chart was flat and he was feeling very well. He was discharged December 15.

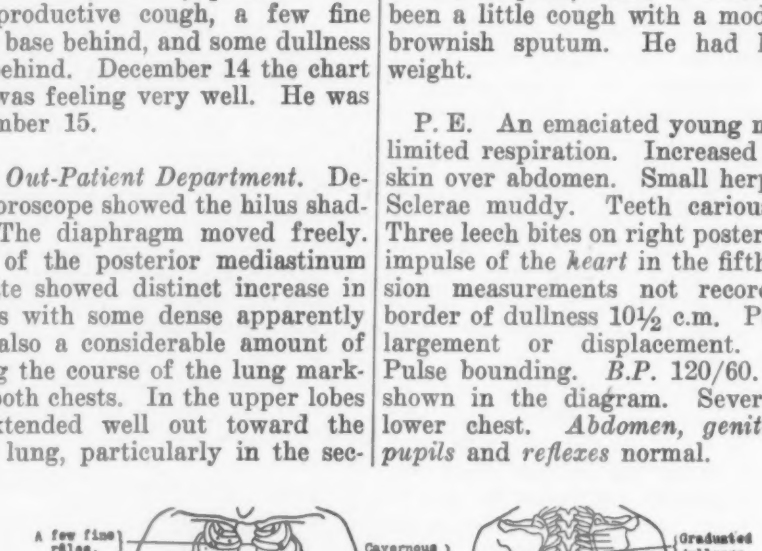
Records of the Out-Patient Department. December 16 the fluoroscope showed the hilus shadows increased. The diaphragm moved freely. The upper part of the posterior mediastinum was dull. A plate showed distinct increase in the hilus shadows with some dense apparently calcified glands, also a considerable amount of fine beading along the course of the lung markings throughout both chests. In the upper lobes these changes extended well out toward the periphery of the lung, particularly in the second and third right interspaces. The apices showed no definite change. June 10, the last recorded visit of the patient to the Out-Patient Department, there was slight discharge from the surgical wound.

Second entry. August 13, two years later, he reëntered for extreme pain radiating from the right lumbar region to the right chest and shoulder.

Additional Past History. He had been a sick boy ever since he was born. He had typhoid fever at five years and herniotomy at six. He had colds every winter and also sore throats until his tonsils and adenoids were removed. He had noticed occasional pallor of the lips. Every autumn and winter he lost weight. Since leaving school four years ago he went every summer for several months to the White Mountains and Canada, where he gained weight and strength. During the past summer he gained fifteen pounds, and came back feeling very well. With his return to the city began his usual decline in health when there.

P. I. On the evening of August 1 while at the theater he was suddenly attacked with sharp pain in the right lumbar region radiating to the right chest and shoulder. He found it very difficult to breathe and to walk. He immediately went home and went to bed. The next morning a physician treated him with pills. He made no improvement. He had been unable to sleep and had taken little by mouth except milk. The pain, which was sharp and lancinating, had been constant day and night until his admission to the hospital, when it subsided. There had been a little cough with a moderate amount of brownish sputum. He had lost considerable weight.

P. E. An emaciated young man with painful limited respiration. Increased pigmentation of skin over abdomen. Small herpes of upper lip. Sclerae muddy. Teeth carious. Breath foul. Three leech bites on right posterior thorax. Apex impulse of the *heart* in the fifth space. Percussion measurements not recorded except left border of dullness 10½ c.m. Possible slight enlargement or displacement. Action rapid. Pulse bounding. *B.P.* 120/60. *Lung* signs as shown in the diagram. Severe pain in right lower chest. *Abdomen, genitals, extremities, pupils* and *reflexes* normal.



Before operation *T.* 102°-104.9°, *P.* 110-120, R. 40-29; *urine,* ℥ 49 on the single occasion recorded, sp. gr. 1.014, the very slightest possible trace of albumin at the single examination, 2-4 red blood corpuscles and 8-10 white blood corpuscles per high power field; *blood,* hgb. 80%, leucocytes 28,000-21,800, polynuclears 84%, many large forms, a few large basophilic cells with sharply outlined basophilic granules, probably unclassified cells of the bone marrow series; reds showed very slight achromia with a considerable number of polychromatophilic cells; platelets much increased, with large forms. *Wassermann* negative. *Sputum* very purulent, a trace of blood. A very few diplococci and large bacilli. No tb. *X-ray.* Dullness in right base rising as high as the third rib, higher in

axillary line, with a rather sharply outlined, somewhat irregular upper border; obscured outline of diaphragm and reached the heart shadow, although a narrow space close to the right side of the heart was less dense than the remainder of the area of dullness. Heart shadow enlarged and suggested slight displacement to the left. Findings suggested probably a considerable amount of fluid in the right base. The character of its outline suggested a possible encapsulation. *Chest tap* in the right mid-axillary line August 14. 400 c.c. of moderately thick creamy fluid with very foul odor. Sp. gr. 1.036. Fluid too thick to make cell count. Smear showed a "pure culture" of short chained streptococci, a very few polynuclear leucocytes. The last few c.c. removed from chest was almost pure blood. Culture showed streptococcus and colon-like bacillus.

Orders. August 13. Individual precautions. Force fluids. Swathe to chest. Soft solid diet. Soapsuds enema. Codeia gr. 1/2 by mouth every three hours p.r.n. for cough. Morhpia gr. 1/4 followed by morphia gr. 1/6 s.c. every four hours p.r.n.

August 15 operation was done. Next day the patient was apparently comfortable. August 17, however, he developed subcutaneous emphysema up to the face. The pulse remained elevated. Cough was very troublesome. He was on a valve apparatus which permitted expiration of air during cough. He made very little improvement. The night of August 19 the temperature was 102.5°, the pulse 132. X-ray showed extreme distention of the soft tissues of the chest with gas. The outlines of the lung fields were indistinct and the fields unusually mottled, probably because of the gas in the soft tissues. The dull area at the right base was about the same size as at the previous examination.

August 20 a second operation was done. The next day the subcutaneous emphysema was less and the patient seemed better, though he was very dyspneic.

That night he took a decided turn for the worse. At a left chest tap no pus was obtained. The morning of August 22 he died.

Discussion

by dr. hugh cabot

This boy presents a rather turbulent history. The additional history which appears at the time of his second admission shows him to be a person of poor resistance and apparently unsuited to a life of indoor work.

At the time of his original admission the very meagre story sounds as if he had a moderately severe acute appendicitis. I find in the record here no statement of what the operation was or what was found, but I think it fairly safe to assume that he had acute appendicitis, that the appendix was removed and that the wound was either drained or that there was some wound infection. This latter assumption appears to me to follow upon the note of June 10, six months after his discharge, that he still had a slight sinus in his surgical wound.

The nature of the process in the lung which apparently followed upon this first operation is somewhat obscure. There are, of course, a large group of lung signs which are frequently found after general anesthesia which at the time suggest pneumonia, but because of rapid improvement make it probable that they were produced by a moderate amount of atelectasis. The x-ray of December 16 shows definite lung involvement, but I am not prepared upon this evidence to be dogmatic as to its nature. From the general picture, however, one would suspect the possibility of tuberculosis.

The condition for which he entered two years later was clearly different from his abdominal lesion at the first admission. The story of the attack on August 1 is quite typical of an acute pleurisy overlying a lesion of the lung. Evidently some degree of pleurisy continued until his admission, and the fluid had by that time become infected and developed into an empyema. It is quite clear that there is a large amount of pus in the right chest, but it is by no means clear that this is consequent upon a definite pneumonia, though such a diagnosis would perhaps fit as well with the story as any other. The character of pus obtained at the tap is not such as one would ordinarily associate with a tuberculous empyema, nor would the amount of pain during the previous two weeks fit with that diagnosis. Ordinarily tuberculous empyema is an insidious development consequent upon the infection of a fluid which at first is relatively free from infection. The finding of a short chain streptococcus is perhaps conclusive that this is an empyema directly consequent upon an infection of the lung other than tuberculosis. It is in some ways like the type of empyema which was so commonly seen associated with influenza, but again the history of this case would not justify that diagnosis.

The indication for operation is clear. The operation should, I think, include the resection of a portion of the rib so as to obtain better drainage than would be obtained by the simple insertion of a tube between the ribs. The operation should be done under local anesthesia, which should be satisfactory.

dr. cabot's pre-operative diagnosis

Acute empyema.

pre-operative diagnosis august 15

Empyema.

FIRST OPERATION

Local novocain. Aspiration in the right posterior axillary line, seventh space, revealed thick yellow-green pus. Infiltration of skin and subcutaneous tissue was done. A small nick was made in the skin and a trocar plunged into the pleural cavity. A free flow of pus resulted. A rubber catheter was put in for drainage, retained with a rubber tube. Ten ounces of yellow-green pus was aspirated.

FURTHER DISCUSSION

I am not clear from the description as to the exact method employed in the drainage, but assume that a catheter was regarded as of sufficient size to permit adequate drainage. I further assume that the use of a small tube was regarded as desirable in order to get tightly fitting tissues about the tube so as to maintain negative pressure in the chest and promote expansion. This is eminently desirable, but it is of course essential that the drainage should be quite free, as the reaccumulation of fluid in these cases is likely to be pretty rapid. The first indication is for adequate drainage, which should be made as tight as possible. Personally, I have had better results with rib resection than with the use of these smaller drainage tubes.

The developments following operation make it quite clear that the tube did not drain satisfactorily. The air in the chest was pushed into the subcutaneous tissues, resulting in widespread emphysema. One notes that the apparatus had a valve which permitted the expiration of air during coughing, but it is quite clear that it did not permit the expiration of all the air, and that some was going into the tissues about the tube. This is a particularly undesirable complication in the presence of an active-minded streptococcus, and I should be fearful of very widespread infection of the surrounding tissues with consequent septicemia.

I assume that the second operation was dictated by the desire to get more satisfactory drainage, and with this desire I should agree.

DR. CABOT'S PRE-OPERATIVE DIAGNOSIS

Infection about drainage tube.

PRE-OPERATIVE DIAGNOSIS AUGUST 20

Empyema, right.

SECOND OPERATION

Local novocain. The patient was in very poor condition and dyspneic. He was given morphia before the operation and seemed scarcely aware of what was going on. The chest wall was infiltrated a hand's width from the old incision, special attention being paid to the costal nerve. An incision made over the eighth rib immediately opened into a large abscess cavity centered about the old puncture wound, lined with necrotic material and foul pus. The rib was bared with periosteum elevators and snapped off with rib cutters. The cavity was then opened and palpated with the finger. It ran upward and forward from the site of the incision. Counter drainage was made in the external abscess cavity and the external cavity packed with iodoform gauze.

FURTHER DISCUSSION

The second operation showed that an abscess had developed about the site of the puncture and drainage was eminently desirable. The resection of the rib at this time was also clearly indicated. I suppose that it may, however, be doubted whether this operation could be expected to head off the infection, which must now be very widespread.

His rather sudden death two days after operation was probably not unexpected. They evidently thought there was a possibility of infection of the left pleural cavity, but they did not give us the evidence, and their tap was negative.

Necropsy should show empyema, right, with a drainage opening and a high degree of collapse of the lung. It should also show widespread infection and I think necrosis of the tissues about the wound and perhaps extending for some distance upward on the chest wall. The rest of the pathological findings should be those of acute infection, probably an enlarged spleen and septicemia.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Empyema of right chest.
Subcutaneous emphysema.
Septicemia.

DR. HUGH CABOT'S DIAGNOSIS

Acute empyema.
Wound infection.
Septicemia.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesions*

Purulent bronchitis with slight bronchiectasis.
Abscesses of the lungs.
Empyema, right.

2. *Secondary or terminal lesions*

Fibrinopurulent pleuritis, left.
Purulent infiltration and necrosis of the diaphragm with abscesses of the liver.
Acute pericarditis.

Phlegmon of the right thoracic wall.
Subcutaneous emphysema.
Slight hypertrophy of the spleen.

3. Historical landmarks

Slight chronic pleuritis.
Operation wound, thoracotomy and rib resection.
Scar of old operation wound, appendectomy.
Obsolete tuberculosis of a bronchial gland.

DR. RICHARDSON: The examination of the head showed dilated pupils and some puffy swelling in the region of the right cheek and a little in the region of the left,—subcutaneous emphysema. The brain tissue was a little wet but otherwise negative.

The subcutaneous tissues over the anterior thoracic wall and down along the upper arms were puffy and crepitated,—subcutaneous emphysema.

On the ball of the left big toe there was a short incised wound 1 cm. long, and in the region of the middle of the nail of this toe there was a dark purplish area 5 mm. across. On the right side of the back there was an open wound. A portion of the eighth rib was wanting. The wound communicated with the right pleural cavity. An area 8 or more cm. in width extended around the margins of the wound and here the subcutaneous and deeper tissues were infiltrated with purulent semi-fluid material, showed more or less necrosis, and were easily separable with the fingers.

The right pleural cavity contained a large amount of pus, while the left contained only a small amount of thin purulent fluid. On the right side there were old adhesions binding the lung down to the thoracic wall in the region of the margins of the wound mentioned. On the left side there were only a few old adhesions between the base of the lung and the diaphragm.

The trachea and bronchi contained considerable mucopus. The bronchial glands were slightly enlarged, pigmented, and juicy. One of the glands showed considerable fibrocalcareous transformation.

The right lung was rather voluminous. The tissue of the upper lobe was generally pale and spongy and yielded a moderate amount of thin reddish frothy fluid. The lower portion of this lobe, however, anteriorly, extending inward from the pleura, showed two small frank abscesses. The tissue of the middle lobe was a little leathery, dirty pale red. The lower lobe was voluminous and rather solid. The tissue of the lower lobe generally was dirty dark red, leathery to boggy, and sown with minute to small abscesses. From the cut ends of the bronchi in the section surfaces pus exuded. The pleura was coated with fibrinopurulent material. On the mesial aspect of the right lung about midway between it and the pericardium there was a sac of pus about 8 x 4 cm. at the base of which there was an opening about 1½ cm. in diameter which communicated with the pleural cavity. The diaphragm, which was bound to the inferior surface of the lower lobe of the right lung by old adhesions which were infiltrated with pus, showed an area of necrosis. The process extended through to the surface of the liver in the region of the uncovered space. It did not extend into the liver, however, at this point. This necrosis of the diaphragm extended into the region of the right lateral aspect of the right lobe of the liver, to which it was weakly adherent, and there it extended into the liver tissue in places for short distances. The adhesions walled off the process from the general peritoneal cavity, but the slightest manipulation of them permitted the passage of a stream of pus from the right pleural cavity into the peritoneal cavity.

The lower third of the upper lobe of the left lung was somewhat lumpy. The tissue on section showed smaller and larger dirty grayish-red elevated areas yielding pus. The pleura over this portion of the lobes was coated with fibrinous exudate. The tissue of the lower lobe was dirty dark red, a little leathery, and the section surfaces showed numerous smaller and larger dirty yellowish elevated areas yielding pus. The pleura over this lobe showed fibrinous exudate.

The pericardium contained a small amount of cloudy fluid and fibrin, and the surfaces in places showed areas of ecchymosis and were roughened with dirty reddish fibrin. The circulatory apparatus elsewhere showed nothing for note.

The spleen weighed 263 grams,—slightly enlarged. The tissue was of fair consistence and pale brown red.

FURTHER DISCUSSION BY DR. CABOT

I do not see that the necropsy findings here are importantly different from what one would have expected.

The presence of abscesses in the left lung is probably part and parcel of the process which originally produced the empyema on the right side. The perforation of the diaphragm and the abscess of the liver show the great activity of the process and make it likely that a fatal outcome would have occurred under any circumstances. It is but further evidence that these streptococcus infections of the lung are relatively speaking very serious.

CASE 10063

An Italian laborer of forty-two entered December 15.

F. H. Not obtained.

P. H. Negative except for occasional cough.

P. I. For the past five days his bowel movements had been painful. There had been slight discharge with moderate constant pain between stools.

P. E. A muscular, sick looking Italian. Throat, *heart* and *lungs* normal. *Abdomen* tympanitic except above pubis, where a rather firm median tumor extended nearly to the umbilicus. This disappeared after removal of thirty ounces of rather concentrated urine. *Genitals, extremities* and *pupils* normal. *Reflexes.* Knee-jerks sluggish. *Rectal examination.* On the right just within the sphincter and posteriorly was a rather extensive indurated area with a very soft center. Digital exploration was followed by the escape of several drams of foul thick brownish pus. The examination was rather painful.

Before operation *T.* 100°, *P.* 80, *R.* 20, *urine* and *blood* not recorded.

Operation was done the day of admission. The patient made a good ether recovery. The next day the temperature was 103.2°, the pulse 102. He was fairly comfortable except for slight pain about the anus. There was slight distention, relieved by turpentine stupes. December 17 the temperature was normal, but the pulse slowly rising. The patient seemed more comfortable. That afternoon he was perspiring very freely and was weak, with great distention unrelieved by stupes. The temperature was 103°, the pulse 140 to 150 and the respirations 58. Passage of a stomach tube brought away considerable liquid brown material. A rectal tube gave some relief. The distention continued, however. Late in the afternoon he died.

Discussion

BY DR. EDWARD L. YOUNG, JR.

In spite of this very short history we must bear in mind that carcinoma of the lower end of the bowel can give very little trouble until it suddenly is the cause of rather severe symptoms. This is of course rather unusual, and the absence of any history more than five days before his entrance is suggestive of an acute condition, not malignant.

The urinary retention is explained on the basis of spasm due to the acute condition in the immediate neighborhood. The examination of the rectum spells ischiorectal abscess which has pointed just inside the sphincter. It is very unusual for a carcinoma to cause such an abscess. I think from the somewhat meagre description here we must assume that an abscess is the whole story.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Ischiorectal abscess.

OPERATION

Pre-operative diagnosis not recorded. Gas and ether. The sphincter was fully dilated, with the escape of some thick dirty brown purulent material. Examination showed much induration on the right of sphincter and a finger's length up the rectum. The abscess had broken through into the rectum and a large cavity was found extending about the rectum on the right. A semicircular incision was made on the right half an inch from the anus and the sphincter divided with the escape of considerable thin brownish material similar to that seen escaping from the anus, but thinner. The cavity extended upward in the ischial fossa for a finger's length. The cavity was wiped out with Harrington's solution and packed with gauze soaked in the same. Dry dressing and paste. The patient was sent to the recovery room in good condition.

FURTHER DISCUSSION

From the description of the operation we can assume that the ischiorectal abscess is a little more extensive, but otherwise not different from hundreds of similar cases, and we should expect him to recover promptly.

The description of his post-operative condition suggests a spreading of the sepsis, which is presumably extending in the retroperitoneal tissues, and then two days after operation we are given the description of a peritonitis coming from the extension of the sepsis from the retroperitoneal tissue into the peritoneum.

I should assume that the whole story was ischiorectal abscess, retroperitoneal extension of the sepsis, with an extensive peritonitis.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Ischiorectal abscess.
Peritonitis.

DR. EDWARD L. YOUNG'S DIAGNOSIS

Ischiorectal abscess.
Retroperitoneal extension of sepsis.
Extensive peritonitis.

ANATOMICAL DIAGNOSIS

1. Primary fatal lesion

Ischiorectal abscess with gangrene of the walls of the rectum and extension of the process into the retroperitoneal tissues and peritoneal cavity.

2. Secondary or terminal lesions

General peritonitis.
Acute serofibrinous pleuritis, left.
Soft hyperplastic spleen.
Septicemia, streptococcus.

3. Historical landmarks

Chronic pleuritis, right.

DR. RICHARDSON: The abdomen was distended and the abdominal wall tense. Section of the peritoneum liberated a considerable amount of gas. The peritoneal cavity contained a moderate amount of purulent fluid material. The peritoneum generally was coated with fibrinopurulent exudate.

There was no interruption in the continuity of the walls of the gastro-intestinal tract as far down as the rectum. In the region of the lower end of the rectum, however, the wall was gangrenous and the process was continuous with the gangrenous walls of an evacuated ischiorectal abscess. This process extended up along the retroperitoneal tissues on each side as far as the perinephric tissues, which were more or less involved.

The left pleural cavity contained a small amount of serofibrinous fluid exudate. There were a few old adhesions on the right.

The lung tissue yielded much dirty dark reddish fluid material and generally was rather sloppy.

The spleen weighed 330 grams, moderately enlarged. The tissue was mushy.

The head was not examined.

Culture from the heart blood yielded a good growth of the streptococcus.

Book Reviews

Charles White of Manchester (1728-1813), and the Arrest of Puerperal Fever. With which are reprinted Charles White's published writings on Puerperal Fever. By GEORGE ADAMI, C.B.E., M.D., F.R.S., Vice Chancellor of the University of Liverpool. New York: Paul B. Hoeber, Inc., 1923. Pp. 141.

American physicians associate two names with the early modern study of puerperal fever, Semmelweiss and our own Oliver Wendell Holmes. It is safe to say that few are familiar with the work of the Manchester School, of which Charles White was the chief exponent. Dr. Adami has given us a detailed account of this pioneer in his delightful book, together with the published writing of White on this subject. Adami tells us that White established the first public hospital in Manchester, England, in 1752, when only 24 years of age. Later this gave place to a larger infirmary of 40 beds, of which White was chief surgeon for 38 years. He was the organizer of the Lying-In Charity, which later developed into St. Mary's Hospital of Manchester. Adami says that the medical history of Manchester began with Charles White, and the Manchester School of Obstetrics arose from his teachings.

He early made a study of puerperal fever, and insisted that scrupulous cleanliness of the patient, the lying-in room, or ward was one of the chief factors in lessening the mortality of this dread affection.

His insistence on the early assumption of the modern Fowler's position for the parturient, to effect better drainage of secretions, met with much opposition, but the wisdom of the teaching was soon made apparent. Chloride of lime was used freely about the lying-in room, and hospital wards, with the happiest results.

The latter part of the book, the published writings of White, are full of wise and useful suggestions, true to this day, and the wonderful results obtained by him in decreased mortality prove his contentions better than any words could do. The book is a valuable contribution to the history of the pioneer work in this subject, and brings just credit to England and the Manchester School.

The Examination of Patients. By NELLIS B. FOSTER, M.D., Associate Physician to the New York Hospital; Associate Professor of Medicine at Cornell University, College of Medicine. Octavo of 253 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1923.

Dr. Foster, in this book, gives useful suggestions to the medical student as to how to examine a patient and correctly interpret the record of his findings. He lays especial emphasis on history-taking, and we can all agree with him that there is no "negative" or "negligible" family history. To those in actual practice, "The Examination of Patients" is valuable as a review of the whole subject of questioning your patient, methods and procedures used in the technique of examining, and the interpretation of results.

The most attractive single thing in the book is the careful elimination of lists of things and substitution of coherent sentences.

SUICIDES IN 1922

SEVENTY-NINE millionaires were among the 12,000 persons who committed suicide in 1922, it was reported by Dr. Harry M. Warren, president of the Save-A-Life League. One-third of those who killed themselves were women, the oldest a great-great-grandmother, 100 years old, and the youngest a child of five. Among others in New York there were 38 college students, 50 college professors and school teachers, 19 preachers and leaders of religious work, 52 judges and lawyers, 84 physicians, 100 presidents and heads of large business concerns, and a number of bank presidents, one of whom tried 10 times to die before succeeding.—*Journal of the Iowa Medical Society.*

THE BOSTON
Medical and Surgical Journal
Established in 1828

Published by The Massachusetts Medical Society under the jurisdiction of the following-named committee:

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SUBSCRIPTION TERMS: *$6.00 per year in advance, postage paid for the United States, $7.56 per year for all foreign countries belonging to the Postal Union.*

Material for early publication should be received not later than noon on Saturday. Orders for reprints must be sent to the printer with galley proof of paper. Upon written request, authors will be furnished free one hundred eight-page reprints, without covers, or the equivalent in pages in articles of greater length.

The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to The Boston Medical and Surgical Journal, 126 Massachusetts Ave., Boston, Mass.

WHY JOIN THE CHAMBER OF COMMERCE?

To physicians who have worked for the improvement of laws pertaining to health in Massachusetts it is evident that our profession has exerted little influence upon the practically-minded politician. Even when a course of action has been urged by able and well-qualified representatives of our larger medical organizations, the politician has seldom accepted their advice when there was much opposition from other quarters. The politician knows full well that important medical policies or reforms will always encounter very active and highly organized opposition. Moreover, the opponents of our profession foster in their minds the suspicion that what is demanded as a reform is in reality a self-seeking, monopolistic design inspired by motives of financial gain, whereas a vote against the medical profession is a vote for freedom of the individual and for the square deal for all. Thus, that profession whose duty it is to guide the public in matters of health has been reduced at times to political impotence. This state of affairs can be quickly remedied if each of us will give a little more time and thought to the subject. Two simple things should be done.

First, every member of the Massachusetts Medical Society should study the program of our Health Committee and should get in touch with his political representatives.

Second, every physician who can afford it should join his local Chamber of Commerce. The Chamber of Commerce is what the members make it, and every member has a voice in the policy. If your Chamber has no committee on health, you and your medical colleagues should take the matter up. If your Chamber has such a committee the activity and influence of the committee can be enhanced by your efforts as a member of the Chamber.

When, by advice of the health committee, the backing of the Chamber has been obtained for a health policy or for a health bill a long step will have been taken toward accomplishment.

For a number of years the Boston Chamber of Commerce has had no health committee, but, about a year ago, a physician was included in the membership of its Committee on Municipal and Metropolitan Affairs. Finding that some of the questions coming before this committee were of far-reaching importance from the health standpoint, the physician succeeded in convincing the Chamber that an independent committee on health ought to be formed. This was accordingly done. The Health Committee is composed of six physicians and five laymen, so that subjects coming before it can be considered from all angles. Furthermore, arrangements have been made with outside institutions through which expert advice in special fields can be obtained at need for the committee. (Information about this committee first appeared in the JOURNAL of December 27, 1923, p. 1078.)

We congratulate the Boston Chamber of Commerce on this recognition of the importance of health to the community.

OF VITAL IMPORTANCE

THE JOURNAL wishes to congratulate the Hon. B. Loring Young, Speaker of the House of Representatives of the Massachusetts Legislature, on his talk on medical legislation given before the Aesculapian Club of the Harvard Medical School and the members of the Club on having had the opportunity of hearing this address.

It is a very difficult thing to arouse the medical practitioner to a realization of the importance of many legislative matters that may greatly increase or greatly hinder his opportunities and the opportunities of the profession as a whole to render their best services to the community.

The various lay societies that have been formed with the express purpose of robbing the guardians of the public health of some of their most valuable weapons are very serious in their intent. It is only with the greatest difficulty that compulsory vaccination has been kept on the statute books; there is a constant effort being made to mislead the public as to the true value of antitoxin, the Schick test, animal ex-

perimentation, and many other agents without which the effectiveness of medical practice would be seriously hampered. The members of these societies are apparently sincere in their purposes and are certainly militant in their methods, outnumbering many times at legislative hearings on public health matters the reputable physicians, who should be their most active opponents. The situation is somewhat analogous to that preceding the late war, when it was impossible to arouse British statesmen to a realization of the fact that Germany was arming herself against their country.

Alertness against these undermining influences is necessary, but there are also reforms that should be actively championed, although unfortunately they are not always. Thus a recent bill providing for the approval of certain medical schools by the Board of Registration before their graduates could be examined was withdrawn for lack of support.

A century ago a bill was passed depriving practitioners of the privilege of the law in collecting fees, unless they had fulfilled certain requirements in their preparation for practice. This law was repealed after a few years, and the State had no jurisdiction over the fitness of its practitioners until the present Board was created in 1894. At the time of the creation of the Board of Registration in Medicine, three Schools, in the broader sense of the word, existed in Massachusetts, and in order to show no favoritism to the Allopathic, the Homeopathic, and the Eclectic Schools, it was provided that of the seven members comprising the Board none should be connected with the faculty of any school of medicine, and no more than three should be members of the same medical society. In these modern times, when the vast majority of medical practitioners belong to the Massachusetts Medical Society, except for a few who belong only to the Massachusetts Homeopathic Society, the difficulty in selecting a group of men of high standards under these conditions becomes apparent. A new bill to do away with these undesirable requirements is to be presented, and should be supported by every physician.

A considerable degree of the difficulty encountered in passing good measures and defeating bad ones lies in the fact that the opponents of honest medical practice are active in influencing our legislators, almost to the exclusion of the reputable practitioners themselves. This should not be and must not continue to be. Every member of the Massachusetts Medical Society is represented in the Legislature. Let him acquaint himself with his representative, in person or by letter, and offer the benefit of his special knowledge and experience when decisions of a medical nature are to be made. Let him attend legislative hearings on these matters of vital interest, when time and opportunity allow, and if possible let his voice also be heard in defense of his doctoring. The least that any of us can do is to let our interest be known and to offer our assistance freely when it may be needed.

APPOINTMENT OF DR. G. S. DERBY

Dr. George Strong Derby has been appointed Professor of Ophthalmology in the Harvard Medical School.

He was born in Boston. His father, the late Dr. Hasket Derby, a well-known American ophthalmologist, occupied a prominent position in Boston for many years. Dr. Derby graduated from Harvard in 1896, receiving the A.B. degree and M.D. *cum laude* from the Harvard Medical School in 1900. He served as surgical interne at the Massachusetts General Hospital for sixteen months. After finishing his studies in Boston he went abroad and studied ophthalmology two years in various European clinics. Beginning practice in Boston in the autumn of 1903, he soon became connected with the Massachusetts Charitable Eye and Ear Infirmary, where he has served ever since. He was also connected with the Carney Hospital for almost ten years. He served in the Ophthalmological Department of the Medical School as assistant and assistant professor. For several years he was a member of the Committee on Library and Finance of the Boston Medical Library, and Medical Director of the Infants' Hospital, and is now on the Board of Directors of that institution. He is a member of the Board of Directors of the Wet Nurse Directory. He is now Ophthalmic Chief of Staff, Massachusetts Charitable Eye and Ear Infirmary, President of the New England Ophthalmological Society, Chairman of the Section on Ophthalmology, American Medical Association, of which he was secretary for ten years, and member of the Council of the American Ophthalmological Society.

During the war he served in France from May, 1917, to June, 1918, as a member of Base Hospital No. 5, which was stationed with the British. From June, 1918, to January, 1919, he was attached to the Headquarters of Medical and Surgical Consultants, A.E.F., as Consulting Eye Surgeon, and second to the Senior Consultant, Lieutenant-Colonel Greenwood.

He is the author of various publications, mostly in the American ophthalmological journals, one of which was awarded the Knapp medal of the Section of Ophthalmology in 1916.

The Williams Professorship was founded in 1893 by Dr. Henry W. Williams, Professor of Ophthalmology in the Harvard Medical School. Following Dr. Williams, it was occupied by Dr. Oliver Wadsworth, Dr. Myles Standish, and Dr. Alexander Quackenboss, who has just retired.

The Boston Medical and Surgical Journal congratulates Dr. Derby and the Harvard Medical School because of this appointment.

AN EXPOSÉ OF BOSTON'S QUACK DOCTORS

THE Boston *American* announces its purpose to expose frauds in connection with the practice of medicine in Boston. It designates the irregular practitioners of medicine as vultures, and asserts that there are more than one hundred of these vultures swarming in the city. The investigation conducted by the *American* has been in operation for two months. Dr. Charles F. Painter, Chairman of the Massachusetts Medical Society, Committee on Medical Education and Medical Diplomas, has written a letter endorsing the purpose of the *American* and setting forth the needs for better laws governing the registration of physicians. Dr. James S. Stone, president of the Suffolk District Medical Society, has also written an endorsement with the hope that the people of Massachusetts will be moved to demand uniformly high standards of its physicians.

In the second announcement the *American* names a man practicing medicine who apparently tried to induce the investigators to pay a considerable amount of money for a cure of conditions that did not exist. The procedure of this doctor is so crude and mercenary that only a foolish or frightened person would be deluded into using the treatment. Other men and their methods are to be referred to in the subsequent issues.

It is, of course, well known that there are impostors in every walk of life, but the alleged doctor who trades on the fears and credulity of the public is fully as contemptible as the sneak thief.

Law and police organizations will never eliminate all of the many varieties of fraud, but it is the duty of the authorities to make increasing warfare against these so-called vultures.

The Secretary of the Board of Registration in Medicine in speaking before a legislative committee recently expressed his belief that there is very little illegal practice in Massachusetts. It is probable that he meant that there is little evidence up to the present time that registration has been secured through fraudulent representations. It is generally known that registered doctors have been convicted of criminal practices from time to time, and that there have been convictions of unregistered practitioners more or less regularly, so that it may be assumed that all of the criminals have not been apprehended. If no irregularities in connection with registration are found we are to be congratulated. Fortunately, even with our inadequate law, we are better off than some States, and a very little change in the statutes would put this State in the vanguard.

We trust that the *American* will be able to rouse public sentiment so that the people will understand the dangers incident to incompetent practice and demand the punishment of medical fakirs, and then go one step farther and use its influence in inducing the Legislature to enact laws that will materially aid in preventing the licensing of ill trained doctors.

The publication of the evidence will put the responsibility on the Board of Registration of cancelling the registration of these alleged "vultures."

THE LICENSED PRACTITIONER

IN *Hospital Progress* for January, 1924, Rev. C. B. Mouliner, S.J., President of the Catholic Hospital Association, presents an article which merits careful attention.

After laying down the fundamental argument that the State must issue a license to everyone who is to have the right to practice medicine because of the obligation of the State to protect the public against the unlawful or incompetent practitioner, the subject is discussed from the angle of continued protection. He concedes that if the examination is adequate in its scope and quality the State has performed its duty in the first instance, that is, so far as the young physician seeking registration and the public are concerned.

The very vital question is then raised in this language: "But what guarantee can a state license give the public that the young medical man is going to continue to be fit to practice medicine?" This is the logical question that has intruded itself into the minds of many students of sociologic problems. If the State requires mental, moral and physical equipment in the first instance, how can it ignore its responsibility during the succeeding years of a man's life, whose service involves so much for those under his care?

As the reverend gentleman says, "The young man who leaves the Class A medical school is a 'safe beginner,' but where is the beginner of a generation ago if he has failed to keep informed of the progress in medicine?"

One solution as suggested by Rev. Mouliner is the conferring of three degrees, such as a bachelor's degree at first; then after certain years of study and experience, a master's degree, and then after another period of study and supervised experience, a doctor's degree; evidently with the belief that through continued study and association with men of established standing, ideals will have been developed and fixed so that the practitioner would have acquired the habit of study and ambition to meet the honorable competition of his fellows.

The argument is sound beyond question, and if some scheme of this sort is ever adopted it must go still further and apply to the men who later in life retrograde through indifference or disability. It is not a rare experience to witness the decadent senile physician attempting to practice after his friends have come to feel that he should no longer carry the responsibilities of service to the sick. Although

the conditions and remedies presented in the paper are truthful and logical, the practical question is: Will the people adopt these recommendations and will the medical profession cooperate? The likelihood of either party endorsing the proposition is small at the present time. If put into recommendations for legislative action it would probably be initiated by the progressives in medicine and meet the same decision, so far as Massachusetts is concerned, that has been given to far less important measures concerning medical education and licensure. It is probable that we will have to be content with little and slow progress, for our people are easily influenced by those who perpetuate prejudice through untruthful assertions about the medical trust and the injustice meted out to the youth with small financial resources.

The medical profession, as a body, would also rise in remonstrance against any further requirements or restrictions. Some because any further requirements are irksome and the great majority because it feels that advances beyond simple basic attainments must come through the profession itself rather than through legal specifications.

The Reverend Father has long been interested in the best possible medical service for the people, and has used his influence to that end, and his suggestions and advice merit more than passing notice.

As a stimulating reference to conditions which might be made better the paper should do good. It may be the inspiration which will lead to definite action.

THE ANNUAL DUES

For one reason or another a proportion of the members of our Society postpone payment of the annual dues. Probably every one who really desires membership in the Society is glad to have this obligation discharged. Those who are able to pay should do so promptly, and those unable to meet the dues should notify the district treasurer. It is unfair to the treasurer and to the member to have his status in doubt. Loyalty to the district society ought to induce members to pay their dues within the prescribed time, thereby securing a larger rebate for the use of the district society.

It may be that some members are not appreciative of the importance of belonging to and sustaining the state Society. Some have declared that the Society is of no benefit to some of its members. Whether this is true depends almost entirely on the members who express this feeling, for any organization is of benefit largely in proportion to the service contributed, but even without any contributed service every member derives benefit, for his standing is acknowledged to be better than that of the nonmember, as a rule, and membership carries the right to be a member of the American Medical Association.

The man who is doubtful of the advantages accruing from membership probably does not attend medical meetings. If there is such a member and if he will take advantage of the many opportunities to be instructed in the most modern ideas he will change his mind, for the scientific meetings provide definite post-graduate instructions.

Probably few realize that the Society spent more than $2500 last year in defense of its members.

We ought to be modest in calling attention to the Journal, which is given to each member who has paid his dues, but it is perhaps permissible to remind our readers that there are only two weekly medical journals published in the United States, and one is the Boston Medical and Surgical Journal. Some may not give due credit to the case histories now being published. Formerly these alone commanded a subscription price of $8.00 per year, and now they are incorporated in the Journal, the combination being furnished for $6.00 per year, and for only a little over half that sum to members of the Society. Please remember that the Society requires the Journal to be omitted from the list of those who do not pay the annual dues.

Pay your annual dues and win the gratitude of your district treasurer.

BOSTON CITY HOSPITAL

The letter to the Journal from Dr. John W. Bartol regarding the present needs of the Boston City Hospital has a peculiar significance owing to the fact that Dr. Bartol, in addition to being an ex-president of the Massachusetts Medical Society and thus having a broad knowledge of the medical situation in the community, was also for many years on the hospital staff and is thus intimately informed as to its requirements.

A new era in the development of the institution has been marked by the opening of the Thorndike Memorial Laboratory and the construction of a large and well equipped out-patient department, but it is more than fifteen years since any important change has been made in the hospital proper. Meanwhile the city has grown enormously in population and, in addition to this, the widespread tendency to living in apartments, with limited facilities for the care of the sick, has greatly added to the burden of the hospital. The condition has recently been so acute, especially in the obstetrical, surgical, and gynecological services, as to constitute a serious menace to the patients. The rapid increase in the work is indicated by the number of admissions for the past three years. For the year ending February 1, 1922, approximately 21,000 patients were admitted; for the next year over 27,000 patients, and for the year just ended the number was about 30,000. In con-

trast to the privately endowed institutions, which can limit their patients, the City Hospital admits every person actually in need of medical attention. In order to meet the situation that has arisen and to provide in some degree for future development, Mayor Curley has presented to the Legislature a bill to provide money for the construction of new wards to increase the bed capacity of the hospital from 1200 to 1800 (including 100 beds for contagious diseases), a new building for house-officers, improvements in the Pathological Laboratory, and for other changes that are incidental to the enlargement of the institution. Special attention may be called to the proposed new quarters for the house staff. The sixty or more interns, who live an extremely exacting and confined existence, are now housed under entirely inadequate conditions and the service which they render should at least be recompensed by the provision of hygienic and pleasant living quarters.

Everyone in Boston, and, indeed, in Massachusetts (for many patients come from outside the city), who has the welfare of the sick at heart and who is interested in the further development of one of the foremost hospitals in the country, will appreciate the assistance which Mayor Curley is attempting to render to the City Hospital, and will desire the Legislature to support him.

THE HISTORY OF THE MASSACHUSETTS MEDICAL SOCIETY

THIS volume has met with a gratifying advance sale, but at least one out of every four members of this Society should own a copy. There is no other book showing the important facts relating to the oldest Medical Society in this country with a continuous existence.

Even if a doctor does not know of a person to whom he would like to send this book he might give a copy to the local library, where it will be useful as a book of reference.

The Massachusetts Medical Society

SECTION OF OBSTETRICS AND GYNECOLOGY

CHARLES E. MONGAN, M.D., *Chairman*,
FREDERICK C. IRVING, M.D., *Secretary*,
THOS. R. GOETHALS, M.D., *Clerk*, Boston Lying-In Hospital, Boston, Mass.
(Address all communications to the Clerk.)

FOR the month of November, 1923, there were reported in Massachusetts, exclusive of Boston, eighteen deaths in the puerperal state.

Accidents of labor	3
Puerperal hemorrhage	1
Puerperal septicemia	5
Puerperal embolus	5
Puerperal albuminuria	4

From the above and from returns of death in the puerperal state made in the preceding month several have been selected for brief discussion in order to clarify somewhat their classification, and to separate, so far as is possible, the avoidable from the unavoidable causes of death.

"Pulmonary embolism (following) childbirth" gives ample record of a cause of death which in general is unavoidable. "Peritonitis, septic (following), maternity delivery" may, on the other hand, be considered as one of the largely avoidable conditions which cause death in the puerperal state. In any case, however, deaths reported as the above two are clearly recorded, and may be listed respectively under the headings of puerperal embolus and puerperal septicemia in the international list of causes of death.

Unfortunately all deaths are not so clearly defined. Thus, a report of "cerebral embolus, phlebitis (puerperal)," is inconclusive as an accurate statement. If the embolism resulted from the phlebitis it would almost certainly have affected the lung rather than the brain, whereas the reported location of the embolus suggests pre-existing heart disease, aneurysm, or atheroma of the aorta. Undoubtedly the death was caused by puerperal embolus, but this in turn might not have happened had puerperal phlebitis, avoidable in many cases, not been the cause.

Similarly, "pulmonary embolism; pelvic and saphenous veins, phlebitis; general septicemia, puerperal; retained secundines," is classified as a death from puerperal embolus. On the other hand, the enumeration of so many pathological conditions suggests that the embolus may have occurred after puerperal septicemia associated with retained secundines had been established.

"Internal uterine hemorrhage, placenta previa," although it may be listed under the head of puerperal hemorrhage, is inaccurate, inasmuch as hemorrhage from placenta previa is always external.

"Bronchopneumonia following Cesarean section for placenta previa; exhaustion," is recorded as causing death in one case, which is classified as a death from puerperal hemorrhage. Here the classification suggests that the fatal result was due to shock or exhaustion following Cesarean in an individual who had lost a great deal of blood from placenta previa; on the other hand, it is not probable, if such were the case, that the patient would have lived long enough to develop bronchopneumonia.

The deaths reported as above mentioned and others similarly tabulated render investigation of maternal mortality difficult, and the conclusions to be drawn therefrom uncertain. Although a woman three months pregnant who dies of bronchopneumonia following administration of ether for a thigh amputation made necessary by a rapidly growing sarcoma of the

tibia is a "death in the puerperal state" in the statistical use of the term, her death cannot be considered in the same light as a death from puerperal septicemia, nor could the former be reckoned an avoidable obstetric death.

Accuracy, therefore, in the reporting of deaths in the puerperal state is essential. Deaths due to puerperal hemorrhage, septicemia, and albuminuria are largely avoidable, and are to be guarded against by prenatal care and close observation, coupled with surgical asepsis during delivery and convalescence; consequently by avoiding ambiguity and prolix wording in reporting such deaths, the practitioner will take the first step in helping to appraise the true status of deaths associated with childbirth in Massachusetts.

Miscellany

ANNUAL MEETING OF THE BOSTON TUBERCULOSIS ASSOCIATION

THE Boston Tuberculosis Association held its annual meeting and election of officers at No. 3 Joy Street, Wednesday, January 23, Dr. James J. Minot, vice-president, in the chair. Formal reports of the treasurer and of committees were presented. The election of officers resulted in the following choice, to serve for the coming year:

President, John B. Hawes, 2d, M.D.; vice-president, James J. Minot, M.D.; treasurer, George S. Mumford; clerk, Miss Isabel F. Hyams, together with a Council of forty-nine members, as follows: Mrs. Nathan Addelson, Gerardo M. Balboni, M.D., Abraham A. Bloom, Vincent Y. Bowditch, M.D., William M. Butler, Mrs. Arthur T. Cabot, James N. Clark, Randall Clifford, M.D., Miss Catherine A. Codman, Governor Channing H. Cox, Mrs. Robert L. DeNormandie, William H. Devine, M.D., Mrs. Dana Drury, Eliot Farley, Cleaveland Floyd, M.D., Miss Elsie Friedman, John B. Hall, M.D., John B. Hawes, 2d, M.D., Mrs. John Henry, George S. Hill, M.D., Stephen W. Holmes, Miss Isabel F. Hyams, Eugene R. Kelley, M.D., Horatio A. Lamb, Harry Linenthal, M.D., Francis X. Mahoney, M.D., Miss Ida Mason, Rev. P. J. McCormack, Henry C. McKenna, James J. Minot, M.D., George S. Mumford, John F. O'Brien, M.D., Edward O. Otis, M.D., Miss Julia C. Prendergast, Abraham C. Ratshesky, Miss Lilian V. Robinson, George Shattuck, M.D., Henry L. Shattuck, Mrs. Channing C. Simmons, Mrs. Miles Standish, Edmund H. Talbot, Fritz B. Talbot, M.D., J. Danforth Taylor, M.D., Henry P. Walcott, M.D., Mrs. Guy Walker, Mrs. Reginald Heber White, Nathaniel K. Wood, M.D., Arthur V. Woodworth, Wade Wright, M.D.

In continuation of the business the Council met at the close of the regular meeting and elected the Executive Committee of the following members:

Eliot Farley, Cleaveland Floyd, M.D., John B. Hawes, 2d, M.D., Mrs. John D. Henry, George S. Hill, M.D., Miss Isabel F. Hyams, Rev. P. J. McCormack, Henry S. McKenna, James J. Minot, M.D., George S. Mumford, Edward O. Otis, M.D., Miss Julia C. Prendergast, Miss Lilian V. Robinson, Mrs. Reginald Heber White, and Arthur V. Woodworth.

As Executive Secretary Miss Bernice W. Billings made a brief report of work during the year. The sale of Christmas seals has resulted in a return of $40,000 to the Association, against $25,000 last year and $13,000 in 1922. The work of the Prendergast Preventorium was emphasized, and also the fact that although this was the major activity the Association was undertaking other work, including follow-up, rehabilitation, lecture and information bureau, institutes and the Modern Health Crusade, for the last named of which it has been possible for the Association to support a full-time worker. Already this year there have been enrolled more than 13,000 children of schools in Boston.

As a demonstration of this kind of effort, a Modern Health Crusade procession entered the hall at the close of Miss Billings' report, comprising seventy children from St. Catherine's School, Charlestown, who sang their songs, did their exercises, and illustrated the teachings of the Crusade. This group provided its own little orchestra and was a bright, tuneful, and instructive portion of the program.

Dr. Joseph Garland, Prendergast camp physician, spoke of the Preventorium, illustrating his story by means of lantern slides of the camp and the children. Dr. David Russell Lyman, Director of the Gaylord Farm Sanatorium, Wallingford, Conn., was the principal speaker of the afternoon, the dominant note in his address being the care of children and the necessity of concentrating on them.

ESSEX SOUTH DISTRICT MEDICAL SOCIETY

A REGULAR meeting of the Essex South Disaríct Medical Society was held at Lynn Hospital, January 23, 1924, with sixty members in attendance. The following clinical program was presented between 5 and 7 o'clock:

1. A Case of Meningitis (infant), Dr. Oliver C. Bixby.
2. A Case of Meningitis (adult), Dr. J. Armand Bédard.
3. X-Ray Treatment of Uterine Fibroid (a paper), Dr. Ester Sundelöff.
4. A Case of Tubercular Glands Treated by Radium, Dr. Orrin C. Blair.
5. Some Surgical Cases, Dr. William T. Hopkins.
6. Inspection of Hospital.

Dinner was served at 7 o'clock.

It was voted to support House Bill 62, the object of which is to afford to the community additional protection against fraudulent medical registration.

It was voted to oppose House Bill 293, which proposes the licensing of partially trained nurses.

It was voted to establish a standing Committee on Legislation and Public Health, this committee to consist of three members appointed by the President. The committee was announced as Dr. William T. Hopkins, chairman, Dr. P. P. Johnson, Dr. Walter G. Phippen.

After the business session Dr. Frank H. Lahey of Boston presented a paper on "The Relation of Surgery to Medical Treatment of Gastric and Duodenal Ulcer."

Adjourned 9.30.

WILLIAM T. HOPKINS, *Reporter.*

EXTENSION COURSE IN HEALTH EDUCATION

A SPECIAL extension course in health education under the auspices of Massachusetts Institute of Technology in coöperation with the Division of University Extension, Massachusetts Department of Education, is being held in Room 10-481, Massachusetts Institute of Technology, Cambridge. Clair E. Turner, associate professor of biology and public health at the institute, is the instructor.

The course is of special interest to health officers, school superintendents, teachers and nurses of Boston and vicinity. The course deals with the administrative problems in health education and school health administration, and the instructor plans to discuss in detail the health program of the school system both as to organization and as to method.

TREATMENT OF PNEUMONIA

THE report appears in an English medical journal that Dr. Tomarkin of Rome is getting unusual results from the use of an antitoxic and an anti-bacterial serum in pneumonia. Under his treatment the mortality was 4 per cent. Another series treated in the same hospital under other methods showed a mortality of 40 per cent. A consignment of the sera has been forwarded to England.

THE SOUTHARD MEMORIAL

DR. WILLIAM HEALY of the Judge Baker Foundation, who has been in charge of the campaign for subscriptions to this memorial, reports that fifty-six persons have contributed. Strangely, Boston, where Dr. Southard did his best work, has only a minority of the subscribers thus far. We in Boston owe the greatest debt to Southard. Shall we not carry the project through?

ANNOUNCEMENT OF AWARDS FROM THE BENJAMIN FRANKLIN FUND, ESTABLISHED IN LONDON, 1759

BENJAMIN FRANKLIN spent much time in England from 1757 to 1762 representing the American colonies. While here he placed one hundred pounds in the hands of members of the Society of Friends as a trust, to be invested with accumulations, for not less than 150 years. Thereafter at the discretion of the trustees, awards were to be made from time to time for the most valuable contributions to science, considered by them, either manuscript or published, on the subject of cures, but particularly in relation to surgery, the nervous system and part "mind treating" have in the recovery and preservation of health.

Announcement is now made of the first awards from this fund:

Minor award, Fusakichi Omori of Tokio, unpublished treatise, "The Rotary Knife in Surgery," five hundred pounds and publication of treatise.

Award, Charles P. Steinmetz of Schenectady, privately published treatise, "The Nervous System as a Conductor of Electrical Energy," one thousand pounds and republication of treatise.

Major award, Pierson W. Banning of Los Angeles, on published work, "Mental and Spiritual Healing: All Schools and Methods: a Text-Book for Physicians and Metaphysicians," two thousand five hundred pounds, scholarship.

ROBERTS LLOYD-GRESHAM,
For the Trustees.

London, W. I.

Correspondence

THE EXPANSION OF THE BOSTON CITY HOSPITAL

Mr. Editor:

The spirit moves me to write a word at the present critical moment, in the hope of promoting consolidation of interest in effectual support for the splendid programme of expansion blocked out for the Boston City Hospital. The moment is critcal by reason of the close approach of the date set for committee hearings on the project, while necessity for action is indicated by the apparent danger of the hospital item being subordinated to some other features of a very large scheme of municipal development outlined by the Mayor.

In itself, however, the plan for rehabilitation of certain portions of the hospital fabric, and the addition of other much-needed units may be expected to meet with a promptly sympathetic reception by the Legislature, if only there be given enthusiastic and intelligent support by persons qualified to express an opinion as to its claims for favorable consideration. It is, moreover, sufficiently obvious that such claims can be securely based upon a familiarity with the growth of an institution which from the first, and always, has maintained its place in the very forefront of municipal hospitals.

The urgency in advocating expansion at this time is explained by the insistent demand for increased accommodation contrasted with the inadequacy of present equipment to meet such demand; while as an

earnest of what may be expected in the conception and construction of extension, it is fair to point with pride to the Burnham and Thorndike Memorial Wards, both models of their kind.

Truly yours,

JOHN W. BARTOL.

MORE ABOUT MIDDLESEX COLLEGE OF MEDICINE AND SURGERY

January 26, 1924.

Managing Editor,
BOSTON MEDICAL AND SURGICAL JOURNAL:

I trust you will extend to us the justice and courtesy of printing our enclosed reply to Dr. Arnold's criticism of our letter.

Very respectfully yours,

JOHN HALL SMITH.
Registrar.

Cambridge, January 17, 1924.

Dear Mr. Editor:

The Trustees of the Middlesex College of Medicine and Surgery have asked me to reply to the most interesting letter of Dr. Harold D. Arnold, of January first, published in the January tenth issue of the JOURNAL.

Dr. Arnold brands as false this statement from the fourth paragraph of our open letter to the President of the American Medical Association—"The Committee appointed by the American Medical Association, and headed by the Dean of the Harvard Postgraduate Medical School, made its visit most unexpectedly. The Committee described this as their usual method of approach and an element of their finesse upon which they prided themselves." In support of his assertion that this is essentially a misstatement of facts, Dr. Arnold is unable to offer any proof that controverts its consistency.

Dr. Bangs went to Chicago on the authorization of the trustees of the school on December 17, 1918, to invite The Council on Medical Education to visit us on a mission of inspection and advice. Dr. Colwell promised to accept this invitation at some indefinite date after the first of the year, but Dr. Colwell did not arrange the time for the inspection by correspondence or otherwise, and Dr. Arnold's recollection is incorrect as to there having been any correspondence between the Surgeon General's office and the college.

Dr. Colwell telephoned Sunday evening that the committee with Dr. Waite would make an inspection early the following morning, and it was upon this short notice that the officers of the school were obliged to change all their appointments in order to receive their guests.

It may be that "the thoughtful and well-informed members of the medical profession" will think that the foregoing facts constitute an "expected" arrival, but the Trustees of the Middlesex Medical College thought otherwise.

In the last part of paragraph six of his letter, Dr. Arnold very frankly states that while the policy of the Council was not to make unexpected visits, yet their plan was not to give "notice long enough ahead for the school to make radical changes from its ordinary teaching. The aim has been simply to study the school as it is ordinarily conducted." This would imply that the Council made a study of the teaching in this school. As a matter of fact, the Council, although urged to do so, did not listen to a single lecture or any portion of the teaching of the school which was in ordinary session with four classes in attendance.

On any other theory than that the attitude of the Council was and is that complained of in our circular letter "that of a prosecuting official toward a criminal," it is difficult to understand how the Council conceived that the school desired to make any radical change from its ordinary teaching for the purpose of creating a false impression.

Speaking of misstatement of facts, Dr. Arnold is incorrect when he asserts that the invitation of the college to the Council on Medical Education was due to its desire to secure recognition by the Surgeon General of the Army. The Surgeon General classed as "well recognized" those schools whose graduates were accepted by 50 per cent. of the state boards. Dr. Colwell advised us that only four state boards accepted the Council's ratings, so that it is perfectly manifest that any action of the Council would have had no effect in placing Middlesex College among the Surgeon General's "well recognized" schools.

The invitation of the Middlesex College was to The Council on Medical Education of the American Medical Association, and Dr. Arnold's statement of January 1, 1924, that "the Surgeon General made this an official inspection of the Army" is the first intimation that the Middlesex College has had of the dual rôles its visitors were playing. It is certainly strange, unless Dr. Arnold and Dr. Waite, both army officers, were acting without proper authority and without the knowledge of the authorities of the War Department, that neither the Surgeon General, nor the two army officers, revealed the official nature of the visit.

In a period of crisis, when civilization was at stake, when man power and medical aid was at a premium, when American boys were dying by the thousand—victims of shrapnel in the trenches, or of influenza on transports, the Surgeon General ruled that commissioned medical officers must be alumni of schools "whose graduates were accepted for examination by 50 per cent. of the State Boards of the country." This arbitrary limitation now looms up in the light of mature consideration as a decision the wisdom of which is open to the most serious question.

It is the opinion of the Trustees of the Middlesex College that, had the advisers of the Surgeon General, among whom we unhesitatingly place Dr. Arnold, been inspired with a greater loyalty to country than to association policies, they would have recommended for acceptance for commissions in the Military Medical Service such physicians as had been certified by Dr. Bowers and his associates on the State Board of Registration in Medicine of the Commonwealth of Massachusetts as competent to practice among the civilian population, rather than have excluded many of them as unfit to care for our soldiers and sailors, on the utterly untenable theory that they were unfit to serve their country in the profession in which they were active practitioners because they had graduated from schools that were not in the so-called "well recognized" classification.

It is so apparent as to be beyond cavil true that the regulations under the draft law were in fact and effect compiled by the American Medical Association.

The appearance of fairness and soundness of the "standard set" its graduates accepted for examination by 50 per cent. of the State Board vanishes into thin air when analysis shows that recognition by State Boards was, and is, based solely in the great majority of States on the arbitrary classification of the American Medical Association. No State Board other than that of Massachusetts has any first-hand knowledge of the value or lack thereof of the Middlesex College of Medicine and Surgery. Except as constantly informed by the American Medical Association no other State Board, than our own, has any knowledge of this school.

When consideration is given to the fact that educational conditions in more than a majority of the States have been so uniformly meagre and otherwise bad that the Federal Government has been obliged to extend its jurisdiction in the effort to better them,

it is hard to properly understand the mental attitude or, granted honesty, the mental lack of capacity of those who would substitute the uninformed (except as instructed by the American Medical Association) opinion of a majority of these States for the well informed and beyond question honest judgment of the State Board of the home of the school. Were this school in one of the educationally pauper States the judgment of its own State Board might be open to question. This school is in Massachusetts. Does even the overweening pride of medical intellect of the Council on Medical Education conceive that in matters educational Massachusetts must abandon to any or all of the other States its judgment on educational affairs?

In the face of the facts can any doubt the insincerity, lack of true patriotism and pure association of selfishness of the standard adopted by the Surgeon General? Have we not some reason to doubt impersonality as a critic of one of the chief makers of that standard and conceive him to be at least disingenuous when, while engaging in his dual rôle as member of the Council and Army Officer, he disavows his third rôle as Director of the Harvard Graduate Medical School and dismisses it as irrelevant?

JOHN HALL SMITH.

DR. ARNOLD'S REPLY

31 January, 1924.

Mr. Editor:

You have been kind enough to offer me an opportunity to reply to the letter of Dr. John Hall Smith, written at the request of the Trustees of the Middlesex College of Medicine and Surgery. Dr. Smith has given my first name as Harold instead of Horace, but the contents of his letter show that it is a reply to my letter of January first, and I evidently am the one referred to. Undoubtedly this mistake was unintentional and it needs no apology.

I wish to comment on only one of Dr. Smith's not too complimentary allusions as to my attitude. As evidence of a "disingenuous" attitude he states that I disavowed my "third rôle as Director of the Harvard Graduate Medical School." A more careful reading of my letter should convince him that I did not disavow this position, but admitted it. I still fail to see what bearing this has on the problem, since it had nothing to do with my presence on the committee of inspection, and the mention of my connection with Harvard still seems to me irrelevant.

The motive of my letter of January first was to have the facts, as far as they can now be ascertained, presented correctly; and certain statements in the published letter of the Trustees of the Middlesex College of Medicine and Surgery to the President of the American Medical Association, as I interpreted them, seemed to me essentially misstatements. In a spirit of fairness, I will accept Dr. Smith's statement that there was no correspondence between the Surgeon General's office and the college as to the date of inspection. My previous statement was based on my recollection, which may have been faulty in this detail.

I cannot now recall the exact reasons why the school authorities were not notified of the exact date of the committee's visit of inspection until the night before. It may have been that the time when Dr. Waite and I could both leave the work at the Surgeon General's office could not be determined definitely until the last moment. That was the case in some instances. I can, however, reiterate the statement that it was not the policy of the Council to make visits of inspection "most unexpectedly," and that the statement that the "committee described this as their usual method of approach and an element of their finesse upon which they prided themselves" is incorrect.

I did state that it was the policy to visit "without notice long enough ahead for the school to make radical changes from its ordinary teaching." This was a statement of general policy and had no special reference to the Middlesex College, as Dr. Smith seems to infer. The reason for this general policy was based on the fact that the Council had had occasion, especially in the inspections of earlier years, to visit medical schools worse than Middlesex where such efforts were made. This policy was the common-sense way to meet this situation, and it was adopted as a general method because it has been the aim of the Council to employ a uniform method in all inspections and not to "play favorites." I repeat my statement that "the inspection made by this committee was made in the same manner, and in the same spirit, as those made of all other medical schools."

Dr. Smith says that I asserted "that the invitation of the college to the Council on Medical Education was due to its desire to secure recognition by the Surgeon General of the Army." I find no such assertion in my letter.

As explained in my letter of January first, the inspection on January 7 and 8, 1918, although primarily an inspection by the Council on Medical Education, was also accepted by the Surgeon General as an official inspection of the Army. This was possible because two members of the committee were on active duty in the Surgeon General's office in charge of the supervision of medical schools and students. I think Dr. Smith is correct in stating that the "dual rôle" of the committee was not divulged at the time. It would have been disclosed if the Army officers could have rendered a favorable report, recommending that the college be accepted as a "well-recognized" medical school; but we did not care to "rub it in" by mentioning the adverse decision of an official Army inspection.

Dr. Smith is wrong in assuming that the rule about a "well-recognized" school was an ironclad one and could not be modified by the Surgeon General. It was modified in some instances after an official inspection for the Army—and in one instance, which I recall, it was modified on the basis of evidence submitted after an inspection by Dr. Colwell alone, acting for the Council on Medical Education. Such recognition was based on evidence in the hands of the Surgeon General and on his decision—not by dictation or influence from the Council on Medical Education.

I wish to take exception to and resent two statements in Dr. Smith's letter which refer to Surgeon General Gorgas. In loyalty and respect for that grand physician I can do no less. It was my great privilege to know the justness, fairness, and independence of this man. The statement "In the face of the facts can any doubt the insincerity, lack of true patriotism, and pure association of selfishness, of the standard adopted by the Surgeon General?" is an insult to the memory of General Gorgas. The statement that "It is so apparent as to be beyond cavil true that the regulations under the draft law were in fact and effect compiled by the American Medical Association" is untrue.

HORACE D. ARNOLD,
520 Commonwealth Avenue, Boston.

NOTE: This closes the correspondence relating to the Middlesex College of Medicine and Surgery, for the present. There are indications of certain procedures which may be of interest when all the facts shall have been acquired. MANAGING EDITOR.

THE HARVARD MEDICAL SCHOOL DORMITORY FUND

Among the letters and other expressions of interest in the Dormitory project the subjoined communication stands as most unusual and gratifying. The committee in charge of the campaign find encouraging support from unexpected sources.

There will come a time when every contributor will be proud to have his name associated with those who are making this contribution to medical education.

MAYO CLINIC
Rochester, Minn.

January 28, 1924.

General Secretary,
263 Beacon Street, Boston, Mass.

My dear Sir:

At the time you sent out the notices about subscriptions for the Harvard Medical School Dormitory Fund, I noticed in the paper that His Highness the Maharaja Sir Sayajirao Gaekwar of Baroda's son, who was a friend of mine, had died. I therefore wrote to His Highness and suggested that it would be most fitting if he would send me $2500 so that I might have a memorial room built in the new dormitory to the late lamented Prince Jayasinh Rao Gaekwar, who graduated from Harvard in the Class of 1912.

I am very happy to say that His Highness received my suggestion favorably and has forwarded me $2500 for the purpose. This I am today sending to Charles F. Adams, Treasurer of Harvard College.

Will you please see to it that a memorial room is reserved and that a fitting tablet to the Prince is placed therein? I would like, if possible, to see a copy of the latter before it is installed so that I can be sure that no mistakes relative to his name, rank, class, etc., are made. Also will you please see to it that a proper letter of appreciation is sent to His Highness? A letter addressed as follows will reach him:

His Highness the Maharaja Gaekwar of Baroda,
Baroda, India.

Very truly yours,
(Signed) H. C. BUMPUS, JR.

PHYSICIANS LIABILITY INSURANCE FOR MEMBERS OF THE MASSACHUSETTS MEDICAL SOCIETY

January 25, 1924.

Editor BOSTON MEDICAL AND SURGICAL JOURNAL,

Dear Sir:

The Medical Protective Company of Ft. Wayne, Indiana, are sending letters by the thousands into our territory, trying to induce the present members insured with us to drop our contract and take insurance with them. I saw one letter of eight pages recently. In the last letter which they have just sent out, consisting of three closely-typewritten pages, I want to quote the last paragraph which absolutely upsets everything they have previously said in this letter.

"No evidence of bias can be attached to the carrying of an individual Medical Protective Contract, inasmuch as the only interest a doctor holding such a contract has, is in the defense of his own particular suit; and it is only in defense of his own interests that he is called upon by us to render any assistance whatsoever. It would be impossible for two doctors holding individual contracts with the Medical Protective Company, to have any concern in the litigation of the other, except a purely professional friendship prompting assistance to a colleague in trouble. No facts exist in such a situation which could be introduced to influence a jury."

Our policy is an individual contract. They have construed Clause No. 5 of our contract to the effect that if one doctor is sued any other doctor insured in the same Company must give all assistance possible for his protection. This clause reads as follows:

"If, therefore, any suit is brought against the assured to enforce a claim, the Assured shall immediately forward to the Company at its Boston, Massachusetts, branch office, every summons or other process as soon as the same have been served on him. The Assured shall at all times render to the Company all coöperation and assistance within its power."

I have before me a letter from the United States Fidelity and Guaranty Company in which they state that "Condition 5 does not oblige any member of the society to give his time and testimony in any case which might be brought against his fellow members. The condition referred to is strictly individual in its application and only requires the insured to cooperate with the Company in a claim or suit brought against himself."

I want to quote a letter from one of our clients whom we defended for five days in court with a verdict of "not guilty."

"I want to express my appreciation of the way in which the suit against me has been handled. I feel sure you could not have a better man than Mr. Cunningham. I am not sure whether or not the plaintiff's attorney has filed exceptions to the decision of the Court, but if he has, I have the utmost confidence in Mr. Cunningham's ability to take care of it."

This case could have been settled outside of Court for less than the cost to us to defend it, and probably it will have to be tried over again, as they have filed exceptions to the decision.

To fight all blackmail cases it takes money. If ALL members were insured with us and would give the coöperation and support many are giving, we could reduce the number of suits. We now have about 1400 members insured. We should have 2500.

I remain,

Very truly yours,
GEORGE H. CROSBIE.

A MOTION PICTURE FOR HEALTH ORGANIZATIONS

METROPOLITAN LIFE INSURANCE COMPANY

New York City, January 15, 1924.

To the Editor:

You probably know that the National Health Council has launched a campaign for periodic health examinations. Coincident with this the Metropolitan Life Insurance Company has produced an excellent motion picture entitled, "Working for Dear Life." A description of the film is contained in a folder.

The value of this film is indicated in the review made by the Health Films Committee of the Council.

We are prepared to send this film free, except for transportation charges, to Health Associations and other organizations desiring it. We are naturally interested in getting as wide a distribution as possible.

Any publicity which may be given to this matter in your publication will be greatly appreciated.

Very truly yours,
LEE K. FRANKEL,
Third Vice-President.

NOTICES

UNITED STATES CIVIL SERVICE EXAMINATION

The United States Civil Service Commission announces the following open competitive examinations:

SPECIALIST IN MATERNAL AND INFANT HYGIENE, $3,500 A YEAR.

ASSISTANT IN MATERNAL AND INFANT HYGIENE, $2,000 TO $3,000 A YEAR.

EXPERT IN MATERNAL AND INFANT CARE, $3,000 A YEAR.

Receipt of applications will close February 26. The examinations are to fill vacancies in the Children's Bureau, Department of Labor, at the entrance salaries named above, and vacancies in positions requiring similar qualifications. Appointees at an annual salary of $2,500 a year or less, may be allowed the increase of $20 a month granted by Congress. Appointees will also be allowed actual traveling expenses and $4 a day for subsistence when away from headquarters on official business.

The duties of specialist in maternal and infant hygiene are to plan, conduct, or assist in investigations into the causes of infant and maternal mortality and morbidity in selected communities, rural and urban, with special reference to maternal and infant care at the time of confinement, and to make reports of such investigations; to inquire into the methods of prevention of infant and maternal mortality; and to conduct conferences with directors of bureaus of child hygiene, supervisors, and teachers of midwives.

The duties of the assistant in maternal and infant hygiene are similar to those of the specialist, but in a subordinate capacity.

The duties of the expert in maternal and infant care are to teach public health nurses the newer methods of maternal and infant care and related duties.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C.

LECTURE COURSE

The 1924 course of lectures for graduate physicians will be delivered in the lecture room of the Bishop Memorial Training School for Nurses, 742 North Street, Pittsfield, Mass., on successive Wednesday afternoons at 5 o'clock.

February 13, Wyman Whittemore, M.D.; February 20, Edwin H. Place, M.D.; February 27, Wyman Whittemore, M.D.

March 5, 12 and 19, Frank H. Lahey, M.D.; March 26, Charles J. White, M.D.

April 2, Charles J. White, M.D.; April 9 and 16, Kenneth D. Blackfan, M.D.; April 23 and 30, Paul D. White, M.D.

The above program will be followed as closely as possible, but the school reserves the right to change the order should unforeseen circumstances make such change necessary.

A. P. MERRILL, *Secretary.*

BOSTON CHILDREN'S HOSPITAL STAFF CLINIC

A Staff Clinic will be held in the Amphitheatre on Friday, February 8th, 1924, at 4:30 p. m. All physicians are cordially invited.

THE HARVARD MEDICAL SOCIETY

The next regular meeting of the Harvard Medical Society will be held as usual in the amphitheatre of the Peter Bent Brigham Hospital, February 12th, 1924, at 8:15 p. m. The program follows:

1. Exhibition of cases.
2. Sprue. Lawrence Smith, M. D.
3. Medicine in New England. J. Reufrew White, M.D., F.R.C.S.

All members of the medical profession, medical students and nurses are invited.

GILBERT HORRAX, *Secretary.*

ANNUAL DUES

The Treasurer reports that there are some members in arrears. Please pay your annual dues and relieve the district treasurer of much annoyance.

THE SPRINGFIELD ACADEMY OF MEDICINE

Dr. John B. Deaver of Philadelphia will be the speaker at the meeting to be held February 12, 1924.

Dr. Hugh Young of Baltimore will speak at a later meeting to be announced.

DISEASES REPORTED TO MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

WEEK ENDING JANUARY 12, 1924

Disease	*No. of Cases*	*Disease*	*No. of Cases*
Anterior poliomyelitis	3	Pneumonia, lobar	136
Chicken-pox	453	Scarlet fever	421
Diphtheria	215	Septic sore throat	3
Dog-bite requiring anti-rabic treatment	1	Syphilis	47
Encephalitis lethargica	1	Tetanus	1
Epidemic cerebrospinal meningitis	2	Suppurative conjunctivitis	17
German measles	16	Tuberculosis, pulmonary	133
Gonorrhea	117	Tuberculosis, other forms	14
Influenza	13	Whooping cough	119
Measles	548	Typhoid fever	5
Mumps	322		
Ophthalmia neonatorum			

SOCIETY MEETINGS

DISTRICT SOCIETIES

Bristol South District Medical Society:
The annual meeting will be held in New Bedford, May 1, 1924.

Essex North:—Annual meeting at Lawrence General Hospital, May 7, 1924.

Essex South District Medical Society:
March 19, 1924:—Salem Hospital.
May 7, 1924:—Annual meeting, Relay House, Nahant, in conjunction with Lynn Medical Fraternity.

Franklin District:—Society meets at Greenfield the second Tuesday of March, May, July, September. Annual meeting in May.

Hampden District:—The meetings for the year are as follows:
January, 1924, at Springfield. April, 1924, at Springfield; annual meeting.

Hampshire District Medical Society:
Meetings held bi-monthly, the second Wednesday in the month, at Boyden's Restaurant, Northampton.

Middlesex South District Medical Society:
February 27, 1924:—Combined meeting with the Surgical Section of Suffolk District at the Boston Medical Library.
March, 1924:—Hospital meeting; place not yet determined.
April, 1924:—Annual meeting.

Norfolk South District:—Meetings first Thursday of each month at 11:30 a. m., February, March, April and May, at United States Hotel, Boston. The February and May meetings are stated meetings.

Suffolk District Medical Society:
February 27, 1924:—Meeting of Surgical Section, in association with the Middlesex South District at the Boston Medical Library at 8:15 p. m.
March 26, 1924:—Meeting of the Medical Section, in association with the Boston Association for the Prevention and Relief of Heart Disease, at the Boston Medical Library at 8:15 p. m.
April 30, 1924:—Annual meeting to be held at the Boston Medical Library at 8:15 p. m.

Worcester District:—The meetings for the year are as follows:
February 18 at Memorial Hospital, Worcester.
March 18 at City Hospital, Worcester.
April 10—A public meeting.
May 8—Annual meeting.

STATE, INTERSTATE AND NATIONAL SOCIETIES

Schedule of meetings of the *New England Dermatological Society:*
Wednesday, February 13, 1924, at 3 p. m., in the Skin Out-Patient Department, Massachusetts General Hospital.
Wednesday, April 9, 1924, at 3 p. m., in the Surgical Amphitheatre, Boston City Hospital.

Well-Meaning Stranger: "Perhaps I can help you. There are one or two things I can tell you about your make of car."

Motorist: "Well, keep them to yourself, there are ladies present."—*The Bystander.*